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SCOTT ENVIRONMENTAL TECHNOLOGY INC PLUMSTEADVILLE PA F/G 21/5
U.S. AIR FORCE TURBINE ENGINE EMISSION SURVEY. VOLUME II. INDIV--ETC(U)
AUG 78 A F SOUZA, P S DALEY F29601-75-C-0046

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SET-1492-50-0877

CEEDO-TR-78-34-VOL-2

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**U.S. AIR FORCE TURBINE ENGINE
EMISSION SURVEY
VOL II INDIVIDUAL ENGINE TEST REPORTS**

Vol 3 - A061483

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PLUMSTEADVILLE, PENNSYLVANIA 18949

DDC
NOV 30 1978

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ENVIRONMENTAL ASSESSMENT RESEARCH DIVISION
DIRECTORATE OF ENVIRONICS

AUGUST 1978

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FINAL REPORT FOR PERIOD JANUARY 1975-JUNE 1978

Approved for public release; distribution unlimited

**CIVIL AND ENVIRONMENTAL
ENGINEERING DEVELOPMENT OFFICE**

(AIR FORCE SYSTEMS COMMAND)

TYNDALL AIR FORCE BASE

FLORIDA 32403

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

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Gas Turbine Engines	Smoke	Oxides of Nitrogen
Exhaust Emissions	Particulates	Afterburner Emissions
Air Pollution	Carbon Monoxide	
	Total Hydrocarbons	
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)		
<p>The gaseous exhaust emissions from 14 military gas turbine engines were measured at various power levels from idle to full power including afterburning. SAE smoke number was determined. All measurements were made using the Air Force Mobile Emissions Laboratory which is a self-contained state-of-the-art gas turbine emissions test laboratory. Emission rates of hydrocarbons, carbon monoxide and oxides of nitrogen were calculated. The emission rate of sulfur oxides was estimated from fuel analyses.</p>		

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The body of data was analyzed to show relationships among the data. These studies included the effect of power setting on emission index and smoke number, variation of gas concentrations across the exhaust plume and the degree of uncertainty introduced by abbreviated sampling methods. A summary table of "Best Estimate" emission factors for all the engines tested is provided.

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DDC	Buff Section <input type="checkbox"/>
UNANNOUNCED	<input type="checkbox"/>
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PREFACE

This report was prepared by Scott Environmental Technology, Inc. under Air Force Contract Number F29601-75-C-0046. The work reported herein was administered under the direction of the Environics Directorate of the Air Force Civil and Environmental Engineering Development Office (Det 1 ADTC) with Major Peter S. Daley serving as Project Officer. Work was performed from January 1975 through June 1977. The engine test program was performed with the cooperation of the following Air Force organizations and private engine overhaulers; their excellent cooperation is gratefully acknowledged.

Teledyne; Nesho MO

First Composite Wing; Andrews AFB MD

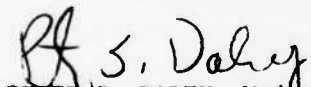
Air Force Logistics Command; Kelly AFB TX

Air Force Logistics Command; Tinker AFB OK

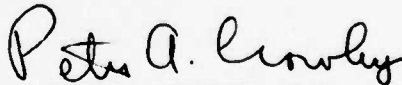
Air Force Tactical Air Command Headquarters; Langley AFB VA

General Electric Company; Lynn MA

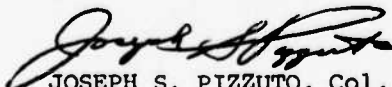
This report is presented in three volumes. Volume I is an overall description of the work performed and the results obtained. A table of best estimate emission factors for Air Force gas turbine engines is presented in Volume I. Volume II contains the results of the individual tests of each engine. Volume III contains the Model Summaries which are statistical summaries of the test results by engine model.



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Project Officer



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JOSEPH S. PIZZUTO, Col, USAF, BSC
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APPENDIX A

ENGINE TEST LOG

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY

REPORT DATE 07/19/77
USAF CONTRACT F29601-75-C-G066

TEST LOG

SCOTT TEST #	TEST CAT.	TEST FIELD	DATE	ENGINE TESTED	ENGINE S/N	TEST LOCATION	***** ENGR REPL#	TEST ID TC LOC# FS#	COMMENTS
1	B	101	03/11/75	J69-125	321901	TELEDYNE+NEO	1	1	1
2	B	102	03/12/75	J85-5	231118	TELEDYNE+NEO	2	1	1
3	B	103	03/14/75	J69-125	321142	TELEDYNE+NEO	1	2	1
4	B	104	03/17/75	J69-125	321989	TELEDYNE+NEO	1	3	1
5	B	105	03/18/75	J69-125	401301	TELEDYNE+NEO	1	4	1
6	A	106	03/18/75	J69-125	401565	TELEDYNE+NEO	1	5	1
7	B	107	03/19/75	J69-125	321512	TELEDYNE+NEO	1	6	1
8	B	108	04/01/75	J69-125	401654	TELEDYNE+NEO	1	7	1
9	B	109	04/01/75	J69-125	321492	TELEDYNE+NEO	1	8	1
10	B	110	04/02/75	J69-125	400365	TELEDYNE+NEO	1	9	1
11	B	111	04/02/75	J69-125	321322	TELEDYNE+NEO	1	10	1
12	B	112	04/03/75	J85-5	230232	TELEDYNE+NEO	2	2	1
13	B	113	04/03/75	J85-5	230259	TELEDYNE+NEO	2	3	1
14	B	114	04/04/75	J85-5	232700	TELEDYNE+NEO	2	4	1
15	B	115	04/07/75	J85-5	231687	TELEDYNE+NEO	2	5	1
16	B	116	04/08/75	J85-5	231436	TELEDYNE+NEO	2	6	1
17	B	117	04/09/75	J85-5	231244	TELEDYNE+NEO	2	7	1
18	B	118	04/10/75	J69-125	321612	TELEDYNE+NEO	1	11	1
19	C	116	04/10/75	J69-125	321612	TELEDYNE+NEO	1	11	1
20	A	119	04/11/75	J85-5	232078	TELEDYNE+NEO	2	8	1
21	B	120	04/14/75	J85-5	232810	TELEDYNE+NEO	2	9	1
22	C	120	04/14/75	J85-5	232810	TELEDYNE+NEO	2	9	1
23	C	121	04/14/75	J85-5	232437	TELEDYNE+NEO	2	10	1
24	C	121	04/14/75	J85-5	232437	TELEDYNE+NEO	2	10	1
25	B	201	05/02/75	J60-P5	637067	ANDREWS	3	1	1
26	B	202	05/05/75	J60-P3	637236	ANDREWS	3	2	1
27	B	203	05/06/75	J60-P3	637285	ANDREWS	3	3	1
28	B	204	05/08/75	J60-P3	636815	ANDREWS	3	4	1
29	B	205	05/12/75	J60-P5B	636976	ANDREWS	3	5	1
30	A	206	05/13/75	J60-P5B	636720	ANDREWS	3	6	1
31	B	207	05/15/75	J60-P5B	637064	ANDREWS	3	7	1
32	C	207	05/15/75	J60-P5B	637064	ANDREWS	3	7	1
33	A	208	05/21/75	J60-P3	637234	ANDREWS	3	8	1
34	B	209	05/21/75	J60-P3	636786	ANDREWS	3	9	1
35	C	209	05/21/75	J60-P3	636786	ANDREWS	3	9	1
36	A	210	05/28/75	J60-P5B	636975	ANDREWS	3	10	1
37	B	211	05/28/75	J60-P3	636845	ANDREWS	3	11	1
38	B	301	06/16/75	J79-15	420655	KELLY AFB, TX	4	1	1
39	B	302	06/19/75	J79-15	434497	KELLY AFB, TX	4	2	1
40	B	303	06/23/75	J79-15	439359	KELLY AFB, TX	4	3	1
41	B	304	06/24/75	J79-15	440165	KELLY AFB, TX	4	4	1
42	B	305	06/25/75	J79-15	434801	KELLY AFB, TX	4	5	1
43	C	305	06/25/75	J79-15	434801	KELLY AFB, TX	4	5	1
44	A	306	07/01/75	J79-15	420966	KELLY AFB, TX	4	6	1
45	B	437	07/15/75	T56-A7B	AE104293	KELLY AFB, TX	5	1	1
46	B	408	07/17/75	T56-A7B	AE102369	KELLY AFB, TX	5	2	1
47	B	409	07/18/75	T56-A7B	AE101891	KELLY AFB, TX	5	3	1
48	B	410	07/22/75	T56-A7B	AE103319	KELLY AFB, TX	5	4	1

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY

REPORT DATE 07/19/77
USAF CONTRACT F29601-75-C-0046

TEST LOG

SCOTT TEST #	TEST CAT.	FIELD TEST #	DATE	ENGINE TESTED	ENGINE S/N	TEST LOCATION	ENG# REPL# TC LOC# FS#	TEST 10 -----*	COMMENTS
49	C	410	07/22/75	756-A7B	AE103319	KELLY AFB, TX	5	4	C 3 8
50	A	411	07/24/75	756-A7B	AE103503	KELLY AFB, TX	5	5	A 3 8
51	B	412	08/04/75	756-A7B	AE104060	KELLY AFB, TX	5	6	B 3 8
52	A	413	08/06/75	756-A7B	AE105484	KELLY AFB, TX	5	7	A 3 8
53	B	414	08/06/75	756-A7B	AE105484	KELLY AFB, TX	5	7	A 3 8
54	B	415	08/08/75	756-A7B	AE101715	KELLY AFB, TX	5	8	B 3 8
55	A	416	08/28/75	7F39	441128	KELLY AFB, TX	6	1	A 5 9
56	A	417	09/17/75	7F39	441447	KELLY AFB, TX	6	2	A 5 10
57	A	418	10/01/75	7F39	441169	KELLY AFB, TX	6	3	A 5 11
58	A	419	10/03/75	7F39	441142	KELLY AFB, TX	6	4	A 5 12
59	B	401	02/03/76	7F33-P3	643295	TINKER AFB	7	1	B 4 13
60	B	402	02/04/76	7F33-P3	612330	TINKER AFB	8	1	B 4 13
61	B	403	02/04/76	7F33-P3	612355	TINKER AFB	8	2	B 4 13
62	B	404	02/06/76	7F33-P3	612479	TINKER AFB	8	3	B 4 13
63	B	405	02/10/76	7F33-P3	642636	TINKER AFB	8	3	B 4 13
64	C	405	02/10/76	7F33-P3	642636	TINKER AFB	7	2	C 4 13
65	B	406	02/11/76	7F33-P3	610928	TINKER AFB	9	1	E 4 13
66	C	406	02/11/76	7F33-P3	610928	TINKER AFB	9	1	C 4 13
67	B	407	02/12/76	7F33-P3	651524	TINKER AFB	10	1	C 4 13
68	B	408	02/21/76	7F33-P3	642953	TINKER AFB	7	3	B 4 14
69	A	408	02/21/76	7F33-P3	642953	TINKER AFB	9	2	A 4 14
70	A	409	02/22/76	7F33-P3	610629	TINKER AFB	9	2	A 4 14
71	B	409	02/22/76	7F33-P3	610629	TINKER AFB	9	2	B 4 14
72	B	410	03/06/76	7F41-A1	141720	TINKER AFB	11	1	B 4 15
73	B	411	03/10/76	7F41-A1	141060	TINKER AFB	11	2	B 4 15
74	C	411	03/10/76	7F41-A1	141060	TINKER AFB	11	2	C 4 15
75	A	412	03/12/76	7F41-A1	141077	TINKER AFB	11	3	A 4 15
76	B	412	03/12/76	7F41-A1	141077	TINKER AFB	11	3	B 4 15
77	B	413	03/15/76	7F41-A1	141174	TINKER AFB	11	4	B 4 15
78	B	414	03/16/76	7F41-A1	141739	TINKER AFB	11	5	B 4 15
79	B	415	03/20/76	7F41-A1	615677	TINKER AFB	12	1	B 4 16
80	C	415	03/20/76	7F41-A1	615677	TINKER AFB	12	1	C 4 16
81	B	416	03/21/76	7F41-A1	615677	TINKER AFB	12	2	B 4 16
82	B	417	03/21/76	7F41-A1	615677	TINKER AFB	12	2	B 4 16
83	C	417	03/21/76	7F41-A1	629523	TINKER AFB	13	1	C 4 16
84	A	418	03/28/76	7F41-A1	629523	TINKER AFB	13	1	A 4 16
85	B	418	03/28/76	7F41-A1	629542	TINKER AFB	13	2	B 4 16
86	B	419	03/28/76	7F41-A1	629542	TINKER AFB	13	2	B 4 16
87	B	420	04/01/76	7F33-P7	651471	TINKER AFB	10	2	B 4 16
88	C	420	04/01/76	7F33-P7	651471	TINKER AFB	10	2	C 4 16
89	B	421	04/02/76	7F33-P7	651354	TINKER AFB	10	3	B 4 16
90	B	422	04/03/76	7F33-P7	651354	TINKER AFB	10	3	B 4 16
91	A	423	04/04/76	7F33-P7	607076	TINKER AFB	12	3	A 4 16
92	B	423	04/04/76	7F33-P7	607076	TINKER AFB	12	3	B 4 16
93	B	424	04/06/76	7F33-P3	642614	TINKER AFB	7	4	B 4 16
94	B	425	04/06/76	7F33-P7	651631	TINKER AFB	10	4	B 4 16
95	A	425	04/07/76	7F33-P7	651631	TINKER AFB	10	4	A 4 16
96	B	426	04/13/76	7F30-P3	659091	TINKER AFB	14	1	B 4 17

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY

REPORT DATE 07/19/77
USAF CONTRACT F29601-75-C-0046

TEST LOG

SCOTT TEST #	TEST CAT.	TEST #	FIELD DATE	ENGINE TESTED	ENGINE S/N	TEST LOCATION	ENGINE REPL	TEST 10 TC LOC	FS#	COMMENTS
97	B	427	04/13/76	TF30-P100	679595	TINKER AFB	15	1	B	4 17
98	B	428	04/14/76	TF30-P3	658705	TINKER AFB	14	2	B	4 17
99	C	428	04/14/76	TF30-P3	658705	TINKER AFB	14	2	C	4 17
100	B	429	04/17/76	TF30-P7	674984	TINKER AFB	16	1	B	4 17
101	A	429	04/17/76	TF30-P7	674984	TINKER AFB	16	1	A	4 17
102	B	430	04/19/76	TF30-P7	675686	TINKER AFB	16	2	B	4 17
103	C	430	04/19/76	TF30-P7	675686	TINKER AFB	16	2	C	4 17
104	B	431	04/20/76	TF30-P7	675686	TINKER AFB	16	3	B	4 17
105	B	432	04/21/76	TF30-P100	679679	TINKER AFB	15	2	B	4 17
106	C	432	04/21/76	TF30-P100	679679	TINKER AFB	15	2	C	4 17
107	B	433	04/22/76	TF30-P100	679581	TINKER AFB	15	3	B	4 17
108	A	434	04/23/76	TF30-P3	658713	TINKER AFB	14	3	A	4 17
109	B	434	04/23/76	TF30-P3	658713	TINKER AFB	14	3	B	4 17
110	B	435	04/24/76	J57-P218	607168	TINKER AFB	17	1	B	4 17
111	C	435	04/24/76	J57-P218	607168	TINKER AFB	17	1	C	4 17
112	A	436	04/25/76	J57-P218	607217	TINKER AFB	17	2	A	4 17
113	B	436	04/25/76	J57-P218	607217	TINKER AFB	17	2	B	4 17
114	B	437	04/26/76	J57-P218	602586	TINKER AFB	17	3	B	4 17
115	A	438	04/27/76	TF30-P100	679747	TINKER AFB	15	4	A	4 18
116	B	438	04/27/76	TF30-P100	679747	TINKER AFB	15	4	B	4 18
117	B	501	07/24/76	F100-P4100	680266	LANGLEY AFB	18	1	B	5 19
118	B	502	07/24/76	F100-P4100	680327	LANGLEY AFB	18	2	B	5 19
119	B	503	07/27/76	F100-P4100	680209	LANGLEY AFB	18	3	B	5 19
120	B	504	07/30/76	F100-P4100	680209	LANGLEY AFB	18	4	B	5 19
121	B	505	08/03/76	F100-P4100	680227	LANGLEY AFB	18	5	B	5 20
122	C	505	08/06/76	F100-P4100	680305	LANGLEY AFB	16	5	C	5 20
123	A	506	08/12/76	F100-P4100	680305	LANGLEY AFB	18	5	A	5 20
124	S	507	08/13/76	F100-P4100	680209	LANGLEY AFB	18	3	S	5 21
125	S	508	08/14/76	F100-P4100	680209	LANGLEY AFB	18	3	S	5 21
126	S	509	08/14/76	F100-P4100	680209	LANGLEY AFB	18	3	S	5 22
127	S	510	08/14/76	F100-P4100	680209	LANGLEY AFB	18	3	S	5 22
128	A	601	08/30/76	TF34-DEF	201G25-4A	GL LYNN, MA	19	1	A	6 23
129	A	602	08/31/76	TF34-DEF	201G25-4A	GL LYNN, MA	19	2	A	6 23
130	B	603	09/08/76	TF34-100	2050A2	GL LYNN, MA	20	1	B	6 25
131	A	604	09/10/76	TF34-100	2050B3	GL LYNN, MA	20	2	A	6 26
132	B	605	09/11/76	TF34-100	205G81	GL LYNN, MA	20	3	B	6 27
133	C	606	09/11/76	TF34-100	205G81	GL LYNN, MA	20	3	C	6 27
134	B	606	09/15/76	TF34-100	205084	GL LYNN, MA	20	4	B	6 28
135	B	607	09/16/76	TF34-100	205085	GL LYNN, MA	20	5	B	6 29
136	B	608	09/22/76	TF34-100	205089	GL LYNN, MA	20	6	B	6 30
137	A	609	09/24/76	T700	010-58	GL LYNN, MA	21	1	A	6 31
138	A	610	09/27/76	T700	010-58	GL LYNN, MA	21	2	A	6 32

STACK-10LE
STACK-802 O
STACK-802 W
STACK-MIL

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APPENDIX B

INDIVIDUAL ENGINE TEST REPORTS

ENGINE J69-T25

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0000

SCOTT TEST NUMBER 10 TYPE 11
ENGINE TYPE & MODEL : J59-125
ENGINE SERIAL # : T-321901
TOTAL ENGINE TIME : 0 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST DATE : 3/11/75

ENGINE 10 NUMBER 1

TEST LOCATION : TELEUTNE-NEJ
TEST CELL NUMBER : 2
TEST CELL OPERATOR : MAJ
SCOTT SUPERVISOR : ZOI
INSTRUMENT OPERATOR : PR
SMOKE OPERATOR : JJ

AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL.TIME) : START FINISH
INLET AIR TEMP. (DEG.F) : 1034 1125
ATMOSPHERIC PRESS. (IN.HG) : 34.0 34.5
RELATIVE HUMIDITY (%) : 28.63 28.63
INLET AIR HUMIDITY : 105 105
(GM H2O/GM DRY AIR) : 0.0043 0.0045

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 200 DEG.F
LENGTH : 17.0 FT.

FUEL ANALYSIS :
SAMPLE # : 1
TYPE : JP-4
Wt.% CARBON : 86.23
Wt.% HYDROGEN : 14.06
Wt.% SULFUR : 0.10
H/C RATIO-ATM.: 1.95
C/H RATIO-MASS: 5.15

TEST MODE	WATER PUMP	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPH	THC DPMC	CO	CO2	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN	W/A
IDLE	38	74	235	19556	0.12	0.11	1.035	648.00	1819.28	2.00	12.26	0.88	11.30	47.71	0.0231
NORMAL	72	700	470	67848	0.13	0.13	1.007	13.00	573.54	2.00	26.22	13.65	12.57	0.00	0.0231
MILITARY	100	975	1120	73004	0.15	0.16	1.073	6.05	547.31	3.20	40.37	24.39	15.98	0.00	0.0236

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SMOKE
IDLE	31.90	150.20	2814	1.73	0.12	1.60	7.50	36.7	661	0.41	0.03	0.30	0.07
NORMAL	4.59	43.10	3077	3.24	1.69	1.50	0.52	37.5	2677	2.82	1.47	1.35	1.74
MILITARY	0.24	32.04	3075	3.98	2.40	1.57	0.26	36.4	3466	4.40	2.69	1.76	2.24

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0046

SET 1492-004-1275

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

ENGINE 1, NUMBER 2

TEST DATE : 3/14/75

SCOTT TEST NUMBER 3, TYPE B

TEST LOCATION : TELETYPE-NEU
TEST CELL NUMBER : 2
TEST CELL OPERATOR : MAU
SCOTT SUPERVISOR : WMS
INSTRUMENT OPERATOR : PR
SMOKE OPERATOR : DU

ENGINE TYPE & MODEL : J47-25
ENGINE SERIAL # : 321142
TOTAL ENGINE TIME : 40 HRS.
PERFORMANCE TEST RESULTS : PASS

AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

FUEL ANALYSIS :

SAMPLE # : 1
TYPE : JP-4
WT.% CARBON : 86.23
WT.% HYDROGEN : 14.06
WT.% SULFUR : 4.18
H/C RATIO-ATM. : 1.96
C/H RATIO-MASS : 6.13

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 380 DEG.F
LENGTH : 1.0 FT.

TEST ENVIRONMENTAL CONDITIONS :
START FINISH
TEST TIME (MIL. TIME) : 1458 1545
INLET AIR TEMP. (DEG.F) : 34.8 34.8
ATMOSPHERIC PRESS. (IN. HG) : 28.82 28.82
RELATIVE HUMIDITY (%) : 98 98
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0038 0.0038

TEST MODE	WATER POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPHM	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN #/A
IDLE	37	74	248	19259	.012	.012	1.031	412.93	1411.44	2.18	11.29	8.39	18.94	36.25
INTERMED. 1	45	106	298	23587	.012	.011	1.054	232.74	1062.88	2.03	13.01	4.91	12.18	34.16
INTERMED. 2	75	394	524	43147	.011	.011	1.256	113.49	516.16	2.11	18.58	7.42	11.17	0.00
NORMAL	92	749	835	67458	.012	.013	1.542	27.34	475.71	2.56	26.26	14.82	11.44	0.00
MILITARY	148	965	1485	73928	.015	.014	1.737	14.87	415.46	2.94	37.12	23.53	13.59	0.00

EXHAUST MASS EMISSION INDICES :

	THC	CO	# / 10 ¹⁰ FUEL	CO2	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SUA
IDLE	24.87	119.74	2984	1.57	0.05	1.52	4.82	28.8	697	0.38	0.01	0.36	0.48
INTERMED. 1	12.34	98.61	2958	1.94	0.14	1.05	3.59	28.6	858	0.58	0.04	0.54	0.58
INTERMED. 2	5.95	56.48	3042	2.79	1.12	1.08	3.89	29.3	1582	1.45	0.58	0.87	1.04
NORMAL	1.28	36.58	3086	3.31	1.07	1.44	1.47	34.5	2577	2.76	1.56	1.28	1.57
MILITARY	4.58	20.25	3101	4.15	2.63	1.52	0.63	38.6	3364	4.54	2.85	1.65	2.17

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-004-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0046

ENGINE 1. NUMBER 3

TEST DATE : 3/17/75

TEST TEST NUMBER 4. TYPE B

TEST LOCATION : TELEDYNE, NEJ
TEST CELL NUMBER : 2
TEST CELL OPERATOR :
SCOTT SUPERVISOR : WMS
INSTRUMENT OPERATOR : PH
SMOKE OPERATOR : DJ

ENGINE TYPE & MODEL : J55-123
ENGINE SERIAL # : 321949
TOTAL ENGINE TIME : 00 HRS.
PERFORMANCE TEST RESULTS : PASS
AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

FUEL ANALYSIS :
SAMPLE # : 1
TYPE : JP-4
WT. % CARBON : 86.23
WT. % HYDROGEN : 14.06
WT. % SULFUR : 0.12
H/C RATIO-ATM. : 1.96
C/H RATIO-MASS : 6.13

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 388 DEGS.F
LENGTH : 1.2 FT.

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEGS.F) : 1218 1385
ATMOSPHERIC PRESS. (IN. HG) : 62.5 63.0
RELATIVE HUMIDITY (%) : 28.67 29.54
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0272 0.0071

TEST MODE	RATED POWER	THRUST	FUEL FLOW	AIR FLOW	F/A ACT	F/A CALC	EPK	THC	CO	CO2	NOX	NO	NO2	SMOKE
			#/HR	#/HR				PPM	PPM	%	PPM	PPM	PPM	#/A
JULE	34	01	230	1720	.013	.012	1.031	485.76	1511.04	2.26	13.43	0.74	12.68	48.05
INTERMED. 1	45	90	285	22540	.013	.011	1.024	154.40	1137.40	2.21	15.04	1.56	13.48	37.55
INTERMED. 2	75	371	535	45686	.012	.010	1.242	39.47	656.49	1.98	15.92	5.98	9.93	5.34
NORMAL	94	535	670	54989	.012	.010	1.383	31.91	571.16	1.97	17.53	7.39	18.13	2.28
MILITARY	100	940	1100	70360	.016	.013	1.692	14.43	455.00	2.00	31.86	19.54	12.32	5.14

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL	NO	NO2	NOX	NO2	SUA
			# / 10.11				# / HR		
JULE	22.67	143.10	2091	1.00	0.10	1.70	0.41	0.02	0.46
INTERMED. 1	7.57	97.10	2973	2.12	0.20	1.50	0.60	0.06	0.57
INTERMED. 2	2.21	64.11	3040	2.00	0.96	1.59	1.37	0.51	1.07
NORMAL	1.00	50.27	3053	2.04	1.20	1.64	1.90	0.80	1.34
MILITARY	1.01	33.39	3093	3.04	2.36	1.68	4.22	2.59	2.00

•• AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-104-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER S. TYPE B

TEST DATE : 3/18/75

ENGINE 1. NUMBER 4

ENGINE TYPE & MODEL : JAY-125

TEST LOCATION : TELEDYNE-NEU

ENGINE SERIAL # : 41341

TEST CELL NUMBER : 2

TOTAL ENGINE TIME : 44 HRS.

SCOTT SUPERVISOR : MMS

PERFORMANCE TEST RESULTS : PASS

INSTRUMENT OPERATOR : PM

AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

SMOKE OPERATOR : DU

TEST ENVIRONMENTAL CONDITIONS :

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 700 DEG.F
LENGTH : 1.0 FT.

FUEL ANALYSIS :

SAMPLE # : 1
TYPE : JP-4
WT.% CARBON : 86.23
WT.% HYDROGEN : 14.06
WT.% SULFUR : 0.18
H/C RATIO-ATM.: 1.96
C/H RATIO-MASS: 6.13

TEST TIME (MIL.TIME) : START FINISH
INLET AIR TEMP.(DEG.F) : 915 1030
ATMOSPHERIC PRESS.(IN.HG) : 46.0 49.5
RELATIVE HUMIDITY (%) : 28.31 28.35
INLET AIR HUMIDITY - 97
(GM H2O/GM DRY AIR) : 0.0069 0.0076

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN	W/A
TULE	38	46	230	18464	0.12	0.12	1.032	420.04	1276.11	2.22	9.23	8.49	8.75	45.32	0.0231
NORMAL	84	570	555	56742	0.12	0.10	1.376	23.49	525.38	1.96	16.05	6.96	9.89	7.97	0.0231
MILITARY	100	990	1090	71812	0.15	0.16	1.735	12.33	524.30	3.20	35.41	21.26	14.15	11.20	0.0231

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL NOX	NO	NO2	# / HR	THC	CO	CO2	NOX	NO	NO2	SUX
TULE	20.19	100.95	2923	1.27	0.07	1.20		4.64	24.5	672	0.29	0.02	0.28	0.00
NORMAL	1.34	52.10	3061	2.62	1.14	1.48		0.07	34.2	2805	1.71	0.74	0.97	1.31
MILITARY	0.43	32.30	3095	3.58	2.15	1.43		0.47	35.2	3373	3.91	2.34	1.56	2.18

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-004-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0046

ENGINE 1. NUMBER 5

TEST DATE : 3/18/75

SCOTT TEST NUMBER 00 TYPE A

ENGINE TYPE & MODEL : J69-125
ENGINE SERIAL # : 421565
TOTAL ENGINE TIME : 00 HRS.
PERFORMANCE TEST RESULTS : PASS
AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIN. TIME) : START FINISH
INLET AIR TEMP. (DEG.F) : 155.0 172.0
ATMOSPHERIC PRESS. (IN.HG) : 52.5 51.5
RELATIVE HUMIDITY (%) : 28.35 28.48
INLET AIR HUMIDITY : 87 87
(GM H2O/GM DRY AIR) : 0.077 0.074

FUEL ANALYSIS :
SAMPLE # : 1
TYPE : JP-4
WT.% CARBON : 85.23
WT.% HYDROGEN : 14.06
WT.% SULFUR : 0.18
W/C RATIO-ATM. : 1.95
C/H RATIO-MASS : 0.13

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 700 DEG.F
LENGTH : 1.4 FT.

TEST MODE	WATER POWER	THRUST	FUEL FLOW	AIM FLOW	F/A	F/A	EPH	THC	CO	CO2	NOX	NO	NO2	SMOKE
		#	#/HR	#/HR	ACT	CALC		PPHM	PPM	%	PPM	PPM	PPM	W/A
Idle	38	78	228	18778	.012	.012	1.052	14.29	1511.99	2.20	11.18	8.47	10.62	32.55
NORMAL	84	575	678	55348	.012	.014	1.386	24.39	545.26	2.02	16.49	6.67	9.82	1.67
MILITARY	108	958	1098	71895	.015	.013	1.773	12.49	464.48	2.68	29.87	17.88	12.87	3.24

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL	NO	NO2	SMOKE
	# / 1000	# / 1000	# / 1000	# / 1000	# / 1000	# / 1000	# / 1000
Idle	15.98	134.54	2892	1.52	0.06	0.32	0.44
NORMAL	1.35	52.64	3068	2.61	1.06	0.71	1.34
MILITARY	0.53	34.24	3892	3.68	2.05	2.23	2.18

00 AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-DM4-1275

REPORT DATE 12/15/75
USAF CONTRACT F296M1-75-C-0045

SCOTT TEST NUMBER 70 TYPE H

TEST DATE : 3/19/75

ENGINE 10 NUMBER 5

ENGINE TYPE & MODEL : J49-12S

TEST LOCATION : TELETYPE, NEU

ENGINE SERIAL # : 321512

TEST CELL NUMBER : 2

TOTAL ENGINE TIME : 00 HRS.

TEST CELL OPERATOR : MAD

PERFORMANCE TEST RESULTS : PASS

SCOTT SUPERVISOR : WMS

AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

INSTRUMENT OPERATOR : PK

TEST ENVIRONMENTAL CONDITIONS :

FUEL ANALYSIS :

TEST TIME (MIL. TIME) : START
INLET AIR TEMP. (DEG.F) : 1412
ATMOSPHERIC PRESS. (IN. HG) : 67.0
RELATIVE HUMIDITY (%) : 28.52
INLET AIR HUMIDITY : 39
(GM H2O/GM DRY AIR) : 0.0061 0.0059

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG.F
LENGTH : 100 FT.

SAMPLE # : 1
TYPE : JP-4
WT. % CARBON : 86.23
WT. % HYDROGEN : 14.06
WT. % SULFUR : 0.10
H/C RATIO-ATM. : 1.96
C/H RATIO-MASS : 6.13

TEST MODE	NET POWER	THRUST	FUEL FLOW	AIR FLOW	F/A ACT	F/A CALC	EPR	THC	CO	CO2	NOX	NO	NO2	SMOKE
		#	#/HR	#/HR				PPHM	PPM	%	PPM	PPM	PPM	W/A
IDLE	38	05	230	17442	0.13	0.10	1.051	178.15	1028.14	1.86	10.04	0.22	9.82	35.14 0.0231
NORMAL	04	537	660	53451	0.12	0.09	1.367	9.94	444.56	1.74	16.60	0.46	8.14	2.72 0.0231
MILITARY	100	919	1000	69000	0.16	0.14	1.690	7.02	411.00	2.72	34.24	22.01	12.23	2.00 0.0231

EXHAUST MASS EMISSION INDICES :

	THC	CO	CU	FUEL FLOW	AIR FLOW	F/A ACT	F/A CALC	EPR	THC	CO	CO2	NOX	NO	NO2	SMOKE
				#/HR	#/HR				PPHM	PPM	%	PPM	PPM	PPM	W/A
IDLE	10.34	103.03	2950	1.07	1.63	0.13	0.10	1.051	178.15	1028.14	1.86	10.04	0.22	9.82	35.14 0.0231
NORMAL	0.04	49.00	3067	3.05	1.50	0.12	0.09	1.367	9.94	444.56	1.74	16.60	0.46	8.14	2.72 0.0231
MILITARY	0.29	29.00	3094	4.00	2.62	0.16	0.14	1.690	7.02	411.00	2.72	34.24	22.01	12.23	2.00 0.0231

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-104-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 80 TYPE H

TEST DATE : 4/1/75

ENGINE J0 NUMBER 7

ENGINE TYPE & MODEL : J69-120
ENGINE SERIAL # : 401A-4
TOTAL ENGINE TIME : 80 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : TELETYPE NEW
TEST CELL NUMBER : 2
TEST CELL OPERATOR : MAJ
SCOTT SUPERVISOR : ZGI
INSTRUMENT OPERATOR : PH
SMOKE OPERATOR : JO

AIR FLOW MEASUREMENT METHOD : CELL-MOUTH

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL. TIME) : START 945 FINISH 1045
INLET AIR TEMP. (DEG.F) : 61.0 61.0
ATMOSPHERIC PRESS. (IN. HG) : 28.60 28.60
RELATIVE HUMIDITY (%) : 45 45
INLET AIR HUMIDITY -
(GAL H2O/GAL DRY AIR) : 0.0053 0.0053

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG.F
LENGTH : 70 FT.

FUEL ANALYSIS :
SAMPLE # : 2
TYPE : JP-4
WT. % CARBON : 85.98
WT. % HYDROGEN : 14.34
WT. % SULFUR : 0.03
H/C RATIO-ATM. : 2.00
C/H RATIO-MASS : 6.01

TEST MODE	MAFED POWER	THROST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPK	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE #/A
IDLE	34	65	240	18310	0.13	0.13	1.073	294.39	1389.64	2.49	10.75	1.37	9.37	0.023
NORMAL	84	521	660	54870	0.12	0.12	1.375	41.50	584.16	2.40	12.91	7.84	5.07	0.032
MILITARY	100	432	1000	70567	0.15	0.16	1.740	17.70	511.48	3.17	26.16	22.04	4.12	0.023

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL NOX	NO	NO2	# / HR	CO2	NOX	NO	NO2	SUA
IDLE	17.69	104.57	2939	1.07	0.17	1.16	0.32	705	0.32	0.04	0.28	0.24
NORMAL	1.87	45.93	3060	1.07	1.01	0.05	1.23	30.3	1.10	0.67	0.43	0.55
MILITARY	0.63	31.70	3000	2.00	2.24	0.42	0.60	34.2	2.00	2.42	0.45	1.00

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-084-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-8846

SCOTT TEST NUMBER 9. TYPE B

TEST DATE : 4/ 1/75

ENGINE 1. NUMBER 2

ENGINE TYPE & MODEL : J69-125
ENGINE SERIAL # : 321492
TOTAL ENGINE TIME : 88 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : TELEUTYNE, NEU
TEST CELL NUMBER : 2
TEST CELL OPERATOR : A
SCOTT SUPERVISOR : LGI
INSTRUMENT OPERATOR : PM
SMOKE OPERATOR : DU

AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG. F) : 141W 151W
ATMOSPHERIC PRESS. (IN. HG) : 78.4 78.4
RELATIVE HUMIDITY (%) : 28.52 28.52
INLET AIR HUMIDITY : 28
(34.428/GM DRY AIR) : 8.4859 8.4859

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 378 DEG. F
LENGTH : 6 FT.

FUEL ANALYSIS :

SAMPLE # : 2
TYPE : JP-4
WT. % CARBON : 85.98
WT. % HYDROGEN : 14.34
WT. % SULFUR : 9.85
H/C RATIO-ATM. : 2.88
C/H RATIO-MASS : 6.81

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	RPM	THC PPM	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE SN	W/A
IDLE	38	62	23W	17637	.013	.011	1.480	153.47	1389.32	2.15		12.71		34.26	0.0231
NORMAL	64	500	66W	52667	.013	.011	1.353	29.97	607.43	2.24		28.45		3.85	0.0231
MILITARY	100	875	100W	61120	.015	.014	1.600	19.38	466.18	2.90		34.30		4.98	0.0231

EXHAUST MASS EMISSION INDICES :

	THC	CO	CU	FUEL FLOW #/HR	NOX	NO	NO2	SOA
IDLE	7.62	120.48	2928			1.81		0.23
NORMAL	1.49	52.01	3052			2.91		0.56
MILITARY	0.75	31.53	3086			3.81		1.86

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-084-1275

REPORT DATE 12/15/75
USAF CONTRACT F29681-75-C-8846

SCOTT TEST NUMBER 18, TYPE B

TEST DATE : 4/ 2/75

ENGINE 1, NUMBER 9

ENGINE TYPE & MODEL : J69-125
ENGINE SERIAL # : 411365
TOTAL ENGINE TIME : 88 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : TELEDYNE-NEU
TEST CELL NUMBER : 2
TEST CELL OPERATOR : K
SCOTT SUPERVISOR : ZGI
INSTRUMENT OPERATOR : PR
SMOKE OPERATOR : DU

AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL.TIME) : START FINISH
INLET AIR TEMP.(DEG.F) : 1245 1345
ATMOSPHERIC PRESS.(IN.HG) : 30.0 33.0
RELATIVE HUMIDITY (%) : 28.59 28.59
INLET AIR HUMIDITY : 100 100
(GM H2O/GM DRY AIR) : 0.0041 0.0041

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG.F
LENGTH : 70 FT.

FUEL ANALYSIS :
SAMPLE # : 3
TYPE : JP-4
WT.% CARBON : 85.58
WT.% HYDROGEN : 14.32
WT.% SULFUR : 0.04
H/C RATIO-ATM.: 2.01
C/H RATIO-MASS: 5.98

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	*--- SMOKE ---
IDLE	36	84	235	14428	.012	.012	1.045	644.30	1943.10	2.14	18.85	7.19	2.85	31.16
NORMAL	84	580	670	58781	.011	.011	1.408	33.47	577.62	2.29	17.59	14.63	2.96	0.00
MILITARY	100	1000	1120	73792	.015	.015	1.803	11.78	465.89	2.99	29.63	26.77	2.86	1.67

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL NUX	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SOX
IDLE	30.66	161.45	2798	1.37	0.98	0.39	7.28	37.9	657	0.32	0.23	0.09	0.19
NORMAL	1.63	49.12	3054	2.46	2.04	0.41	1.09	32.9	2046	1.65	1.37	0.28	0.54
MILITARY	0.44	30.61	3086	3.20	2.89	0.31	0.56	34.3	3457	3.58	3.24	0.35	0.90

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-004-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0046

SCOTT TEST 0046R 11. TYPE 4

TEST DATE : 4/ 2/75

ENGINE 1. NUMBER 10

ENGINE TYPE & MODEL : J69-125
ENGINE SERIAL # : 321322
TOTAL ENGINE TIME : 00 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : TELEUTNE-NEU
TEST CELL NUMBER : 2
TEST CELL OPERATOR : MAU
SCOTT SUPERVISOR : LGI
INSTRUMENT OPERATOR : PK
SMOKE OPERATOR : UU

AIR FLOW MEASUREMENT METHOD : CELL-MOUTH

TEST ENVIRONMENTAL CONDITIONS :

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 102 DEG.F
LENGTH : 70 FT.

FUEL ANALYSIS :

SAMPLE # : 3
TYPE : JP-4
WT.% CARBON : 85.58
WT.% HYDROGEN : 14.32
WT.% SULFUR : 0.04
H/C RATIO-ATM. : 2.01
C/H RATIO-MASS : 5.98

TEST TIME (MIL-TIME) : START FINISH
INLET AIR TEMP.(DEG.F) : 38.0 38.0
ATMOSPHERIC PRESS.(IN.HG) : 28.61 28.61
RELATIVE HUMIDITY (%) : 50 50
INLET AIR HUMIDITY -
(LOW H2O/GM DRY AIR) : 0.0025 0.0025

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPH	THC PPMC	CO	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN	W/A
IDLE	38	46	230	19111	.012	.012	1.045	763.34	1868.73	2.19	10.97	4.70	6.27	24.40	0.023
NORMAL	04	570	570	54426	.011	.012	1.407	35.98	658.49	2.41	15.96	11.13	4.83	1.14	0.023
MILITARY	100	975	1120	72070	.015	.015	1.793	13.27	479.90	3.15	29.57	25.05	3.72	0.00	0.023

EXHAUST MASS EMISSION INDICES :

	# / 1000 # FUEL			# / 1000 #		
	THC	CO	CO2	THC	CO	CO2
IDLE	35.57	152.07	2799	0.18	35.00	644
NORMAL	1.24	53.02	3048	1.11	35.05	2042
MILITARY	1.47	29.92	3087	0.53	33.5	3450

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

ENGINE J85-5

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TOWING ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-004-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 20 TYPE M

TEST DATE : 3/17/75

ENGINE 20 NUMBER 1

ENGINE TYPE & MODEL : J45-D

ENGINE SERIAL # : 23114

TOTAL ENGINE TIME : 30 HRS.

PERFORMANCE TEST RESULTS : PASS

AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

TEST LOCATION : TELEUTINE, NEU

TEST CELL NUMBER : 2

TEST CELL OPERATOR : CAM

SCOTT SUPERVISOR : HHS

INSTRUMENT OPERATOR : PH

SMOKE OPERATOR : FL

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL. TIME) : START FINISH

INLET AIR TEMP. (DEG.F) : 35.4 37.5

ATMOSPHERIC PRESS. (IN.HG) : 28.52 29.40

RELATIVE HUMIDITY (%) : 100 87

INLET AIR HUMIDITY : 0.0042

(GM H2O/GM DRY AIR) : 0.0042

SAMPLE LINE :

FLOW RATE : 23 LPM

TEMPERATURE : 400 DEG.F

LENGTH : 1.4 FT.

FUEL ANALYSIS :

SAMPLE # : 1

TYPE : JP-4

WT.% CARBON : 86.23

WT.% HYDROGEN : 14.06

WT.% SULFUR : 0.10

H/C RATIO-ATM.: 1.95

C/H RATIO-MASS: 6.13

TEST MODE	RATED POWER #	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN	W/A
IDLE	47	00	450			0.11		990.54	2342.51	1.96	9.68	6.21	3.46	3.10	0.0234
NORMAL	42	1531	1470			0.10		78.23	495.43	1.98	19.52	4.54	14.98	3.67	0.0231
MILITARY	100	2655	2690			0.16		21.03	546.72	3.21	36.93	14.66	22.27	7.37	0.0231
MAX AB	100	3870	3430			0.59		1.22	1567.75	11.44	75.68	47.74	27.94	8.70	0.0231

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL NOX	NO	NO2
IDLE	42.44	204.35	2690	1.39	1.89	0.50
NORMAL	4.39	48.50	3050	3.14	0.73	2.41
MILITARY	4.77	33.40	3092	3.71	1.47	2.24
MAX AB	4.01	27.00	3104	2.15	1.35	0.79

	THC	CO	CO2	NOX	NO	NO2	SUA
IDLE	22.27	92.4	1210	0.62	0.40	0.22	0.90
NORMAL	6.46	71.4	4496	4.62	1.08	3.55	2.94
MILITARY	2.06	94.1	8318	9.99	3.97	6.02	5.37
MAX AB	0.10	224.1	25169	18.09	11.41	6.68	16.54

•• AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-004-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0000

SCOTT TEST NUMBER 12. TYPE H

TEST DATE : 4/ 3/75

ENGINE 2. NUMBER 1

ENGINE TYPE & MODEL : J45-D

TEST LOCATION : TELEDYNE/NEU

ENGINE SERIAL # : 230202

TEST CELL NUMBER : 2

TOTAL ENGINE TIME : 00 HRS.

TEST CELL OPERATOR : SCOTT

PERFORMANCE TEST RESULTS : PASS

SCOTT SUPERVISOR : ZGI

AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

INSTRUMENT OPERATOR : PH

TEST ENVIRONMENTAL CONDITIONS :

SMOKE OPERATOR : JJ

TEST TIME (MIL. TIME) : START FINISH

SAMPLE LINE : FLOW RATE : 23 LPM

SAMPLE # : 3

INLET AIR TEMP. (DEG.F) : 34.0

TEMPERATURE : 300 DEG.F

TYPE : JP-4

ATMOSPHERIC PRESS. (IN. HG) : 28.54

LENGTH : 70 FT.

WT. % CARBON : 85.50

RELATIVE HUMIDITY (%) : 72

WT. % HYDROGEN : 14.32

WT. % SULFUR : 0.04

INLET AIR HUMIDITY : (GM H2O/GM DRY AIR) : 0.0031

M/C RATIO-ATM. : 2.01

C/H RATIO-MASS : 5.90

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPK	THC PPMC	CO	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN	W/A
IDLE	40	90	440	1480	0.12	0.12		562.98	1990.19	2.12	9.51	3.30	6.21	0.00	0.0230
NORMAL	92	1510	1480		0.10	0.10		96.19	478.96	2.01	14.07	5.66	8.41	1.04	0.0234
MILITARY	100	2720	2770		0.10	0.10		26.39	538.14	3.51	26.13	18.79	7.34	2.65	0.0231

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	NOX	FUEL	NO	NO2
IDLE	27.13	108.22	2797	1.31	0.46	0.86	
NORMAL	5.32	46.22	3048	2.23	0.90	1.39	
MILITARY	0.85	30.13	3086	2.40	1.73	0.07	

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-084-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0040

SCOTT TEST NUMBER 13, TYPE H

TEST DATE : 4/ 3/75

ENGINE NO. NUMBER 3

ENGINE TYPE & MODEL : J45-B
ENGINE SERIAL # : 230859
TOTAL ENGINE TIME : 00 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : TELETYPE NEW
TEST CELL NUMBER : 2
TEST CELL OPERATOR : MAU
SCOTT SUPERVISOR : LGI
INSTRUMENT OPERATOR : PM
SMOKE OPERATOR : DU

AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG. F) : 143.0 153.0
ATMOSPHERIC PRESS. (IN. HG) : 47.0 47.0
RELATIVE HUMIDITY (%) : 28.64 28.64
INLET AIR HUMIDITY : 53 53
(OM 42.0/GM DRY AIR) : 0.0037 0.0037

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 200 DEG. F
LENGTH : 70 FT.

FUEL ANALYSIS :
SAMPLE # : 3
TYPE : JP-4
WT. % CARBON : 85.58
WT. % HYDROGEN : 14.32
WT. % SULFUR : 0.04
H/C RATIO-ATM. : 2.01
C/H RATIO-MASS : 5.98

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPK	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN #/A
IDLE	40	04	460			.012		590.72	2276.73	2.18	9.72	3.18	6.54	1.04 0.0230
INTERMED. 1	65	210	590			.009		114.00	1230.42	1.70	8.78	2.54	6.24	0.00 0.0230
INTERMED. 2	87	1071	1160			.010		120.14	554.39	1.88	12.50	3.43	9.45	1.04 0.0231
NORMAL	92	1032	1570			.011		46.00	514.39	2.20	15.13	5.68	9.45	1.04 0.0231
MILITARY	100	2501	2640			.017		38.78	564.16	3.43	26.99	5.85	21.15	1.55 0.0231

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPK	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN #/A
IDLE	27.50	103.82	2771			1.29	0.42	0.87	12.65	84.6	1275	0.59	0.19	0.40	0.37
INTERMED. 1	24.56	133.10	2870			1.55	0.45	1.10	12.13	73.5	1693	0.91	0.27	0.65	0.47
INTERMED. 2	7.04	56.71	3027			2.10	0.58	1.52	8.16	45.8	3511	2.44	0.67	1.77	0.93
NORMAL	4.39	45.77	3052			2.19	0.62	1.37	0.89	71.9	4771	3.45	1.29	2.15	1.25
MILITARY	1.27	32.26	3081			2.54	0.43	1.93	3.35	45.2	8135	6.69	1.45	5.24	2.11

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-104-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 14 TYPE B

TEST DATE : 4/ 4/75

ENGINE 2, NUMBER 4

ENGINE TYPE & MODEL : JRS-5
ENGINE SERIAL # : 232700
TOTAL ENGINE TIME : 00 HRS
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : TELEUTNE, NEU
TEST CELL NUMBER : 2
TEST CELL OPERATOR : MAJ
SCOTT SUPERVISOR : ZST
INSTRUMENT OPERATOR : PM
SMOKE OPERATOR : DU

AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL.TIME) : START FINISH
INLET AIR TEMP. (DEG.F) : 1320 1420
ATMOSPHERIC PRESS. (IN.HG) : 64.0 64.0
RELATIVE HUMIDITY (%) : 20.74 20.74
INLET AIR HUMIDITY : 31 31
(GM H2O/GM DRY AIR) : 0.0040 0.0040

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG.F
LENGTH : 74 FT.

FUEL ANALYSIS :
SAMPLE # : 3
TYPE : JP-4
WT.% CARBON : 85.50
WT.% HYDROGEN : 14.32
WT.% SULFUR : 0.04
H/C RATIO-ATM.: 2.01
C/H RATIO-MASS: 5.90

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPH	THC PPM	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE #/A
JULE	46	75	400			.013		529.04	2137.04	2.29	10.15	3.16	6.99	0.000
NORMAL	92	1472	1420			.010		37.35	426.45	2.10	16.70	10.16	6.55	0.023
MILITARY	100	2535	2500			.017		13.43	476.11	3.47	29.62	21.55	8.00	0.023

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL NOX	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SOX
JULE	23.70	160.90	2000	1.30	0.41	0.90	10.90	76.4	1292	0.60	0.19	0.41	0.37
NORMAL	1.00	39.72	3000	2.55	1.55	1.20	2.03	56.4	4356	3.63	2.20	1.42	1.13
MILITARY	0.64	27.04	3092	2.76	2.01	0.75	1.11	40.6	7853	7.01	5.10	1.91	2.03

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-084-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-8846

SCOTT TEST NUMBER 15, TYPE H

TEST DATE : 4/ 7/75

ENGINE 2, NUMBER 5

ENGINE TYPE & MODEL : J45-D
ENGINE SERIAL # : 231687
TOTAL ENGINE TIME : 88 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : TELEDYNE-NEU
TEST CELL NUMBER : 2
TEST CELL OPERATOR : MAD
SCOTT SUPERVISOR : ZGT
INSTRUMENT OPERATOR : PR
SMOKE OPERATOR : DU

AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

TEST ENVIRONMENTAL CONDITIONS :

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 388 DEG.F
LENGTH : 70 FT.

TEST TIME (MIN.TIME) : START FINISH
INLET AIR TEMP. (DEG.F) : 1420 1520
ATMOSPHERIC PRESS. (IN.HG) : 54.8 54.8
RELATIVE HUMIDITY (%) : 28.54 28.54
INLET AIR HUMIDITY - 22 22
(GM H2O/GM DRY AIR) : 0.0021 0.0021

FUEL ANALYSIS :
SAMPLE # : 3
TYPE : JP-4
WT.% CARBON : 85.58
WT.% HYDROGEN : 14.32
WT.% SULFUR : 0.04
H/C RATIO-ATM : 2.01
C/H RATIO-MASS : 5.98

TEST MODE	RATED POWER %	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPH	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE SN	W/A
IDLE	46	82	450			.012		743.53	2238.47	2.14	9.22	1.47	7.74	0.00	0.0230
NORMAL	92	1506	1470			.011		70.25	480.04	2.21	16.45	5.48	10.98	1.14	0.0234
MILITARY	100	2570	2600			.017		36.66	527.02	3.46	27.92	16.52	11.41	3.94	0.0231

EXHAUST MASS EMISSION INDICES :

	# / 10 ³ gm FUEL			# / HR		
	THC	CO	CU2	THC	CO	CO2
IDLE	34.80	102.97	2753	15.64	82.3	1239
NORMAL	3.55	42.32	3059	5.21	62.2	4497
MILITARY	1.19	29.87	3005	3.09	77.7	8022

# / 10 ³ gm FUEL			# / HR		
THC	CO	NO	THC	CO	NO2
34.80	102.97	1.24	15.64	82.3	1.04
3.55	42.32	2.38	5.21	62.2	1.59
1.19	29.87	2.60	3.09	77.7	1.06

# / 10 ³ gm FUEL			# / HR		
THC	CO	NO	THC	CO	NO2
34.80	102.97	1.24	15.64	82.3	1.04
3.55	42.32	2.38	5.21	62.2	1.59
1.19	29.87	2.60	3.09	77.7	1.06

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0045

SET 1492-DW4-1275

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

ENGINE 2, NUMBER 6

TEST DATE : 4/ 8/75

SCOTT TEST NUMBER 16, TYPE B

TEST LOCATION : TELEOYNE, NEU
TEST CELL NUMBER : 2
TEST CELL OPERATOR : MAJ
SCOTT SUPERVISOR : ZGT
INSTRUMENT OPERATOR : PK
SMOKE OPERATOR : DU

ENGINE TYPE & MODEL : J85-5
ENGINE SERIAL # : 232436
TOTAL ENGINE TIME : 89 HRS.
PERFORMANCE TEST RESULTS : PASS
AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

FUEL ANALYSIS :
SAMPLE # : 3
TYPE : JP-4
WT.% CARBON : 85.58
WT.% HYDROGEN : 14.32
WT.% SULFUR : 0.04
H/C RATIO-ATM.: 2.01
C/H RATIO-MASS: 5.95

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 388 DEG.F
LENGTH : 7# FT.

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG.F) : 1345 1445
ATMOSPHERIC PRESS. (IN.HG) : 64.8 64.8
RELATIVE HUMIDITY (%) : 28.53 28.53
INLET AIR HUMIDITY : 65 65
(GM H2O/GM DRY AIR) : 0.0087 0.0087

TEST MODE	RATED POWER %	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPK	THC PPM	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE #/A
IDLE	46	85	468	598	.013	.013		663.86	2489.14	2.36	9.57	8.92	8.65	0.00 0.0238
INTERMED. 1	65	195	598		.011	.011		354.70	1485.58	1.98	9.43	8.57	8.86	0.00 0.0231
INTERMED. 2	87	996	1130		.010	.010		79.56	526.88	1.94	14.62	1.75	8.88	0.52 0.0231
NORMAL	92	1482	1425		.011	.011		52.51	468.38	2.11	12.93	5.21	7.72	2.08 0.0231
MILITARY	100	2496	2570		.017	.017		26.85	499.92	3.46	25.49	15.74	9.75	2.08 0.0231

EXHAUST MASS EMISSION INOICES :

	THC	CO	CU2	FUEL	NOX	NO	NO2	THC	CO	CU2	NOX	NO	NO2	SOX
IDLE	28.38	180.89	2775	1.17	1.06	0.11	1.35	13.06	82.8	1276	8.54	8.05	8.49	0.37
INTERMED. 1	18.82	130.23	2879	1.43	1.35	0.09	1.48	11.10	76.8	1699	8.85	8.05	8.88	0.47
INTERMED. 2	4.63	53.57	3039	1.77	1.48	0.29	1.48	5.23	68.5	3434	2.88	8.33	1.68	0.94
NORMAL	2.78	42.51	3061	1.96	1.17	0.79	1.17	3.96	68.6	4362	2.79	1.13	1.67	1.14
MILITARY	8.85	28.44	3088	2.38	0.91	1.47	0.91	2.18	73.1	7937	6.12	3.78	2.34	2.05

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-084-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 17, TYPE B

TEST DATE : 4/ 9/75

ENGINE 2, NUMBER 7

ENGINE TYPE & MODEL : J85-5
ENGINE SERIAL # : 231244
TOTAL ENGINE TIME : 88 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : TELEOYNE, NEU
TEST CELL NUMBER : 2
TEST CELL OPERATOR : K
SCOTT SUPERVISOR : ZGT
INSTRUMENT OPERATOR : PH
SMOKE OPERATOR : OU

AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG. F) : 1645 1745
ATMOSPHERIC PRESS. (IN. HG) : 29.46 29.46
RELATIVE HUMIDITY (%) : 34 34
INLET AIR HUMIDITY : 0.0057 0.0057
(GM H2O/GM DRY AIR) :

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG. F
LENGTH : 70 FT.

FUEL ANALYSIS :
SAMPLE # : 3
TYPE : JP-4
WT. % CARBON : 85.58
WT. % HYDROGEN : 14.32
WT. % SULFUR : 0.04
H/C RATIO-ATM. : 2.01
C/H RATIO-MASS : 5.98

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE SN	W/A
IDLE	46	85	450			0.13		554.69	2442.49	2.39	10.36	2.25	8.12	0.00	0.0230
NORMAL	92	1380	1370			0.11		29.71	481.93	2.17	15.41	5.53	9.88	0.00	0.0231
MILITARY	100	2400	2490			0.17		19.95	518.80	3.47	31.41	20.45	10.96	2.13	0.0231

EXHAUST MASS EMISSION INDICES :

	THC	CO	CU	FUEL FLOW #/HR	NOX	FUEL	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SOX
IDLE	23.53	100.90	2787	1.26	0.27	0.99			10.59	81.4	1254	0.57	0.12	0.44	0.36
NORMAL	1.53	43.24	3063	2.27	0.81	1.46			2.09	59.2	4197	3.11	1.12	2.00	1.09
MILITARY	0.65	29.38	3080	2.92	1.90	1.02			1.61	73.2	7688	7.28	4.74	2.54	1.99

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-1084-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 18, TYPE B

TEST DATE : 4/10/75

ENGINE 1, NUMBER 11

ENGINE TYPE & MODEL : J69-125
ENGINE SERIAL # : 321612
TOTAL ENGINE TIME : 88 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : TELEDYNE-NEU
TEST CELL NUMBER : 2
TEST CELL OPERATOR : MAU
SCOTT SUPERVISOR : ZGT
INSTRUMENT OPERATOR : PH
SMOKE OPERATOR : OU

AIR FLOW MEASUREMENT METHOD : BELL-MUUTH

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL-TIME) : START FINISH
INLET AIR TEMP. (DEG.F) : 15.0 16.0
ATMOSPHERIC PRESS. (IN-HG) : 61.0 61.0
RELATIVE HUMIDITY (%) : 28.6 28.6
INLET AIR HUMIDITY - 54 54
(GM H2O/GM DRY AIR) : 0.0064 0.0064

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 100 DEG.F
LENGTH : 70 FT.

FUEL ANALYSIS :
SAMPLE # : 3
TYPE : JP-4
WT.% CARBON : 85.58
WT.% HYDROGEN : 14.32
WT.% SULFUR : 0.04
H/C RATIO-ATM.: 2.01
C/H RATIO-MASS: 5.98

TEST MODE	WATER POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPM	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE #/A
IDLE	38	64	220	17948	.012	.012	1.045	144.48	1396.84	2.25	11.78	1.25	10.53	46.00
NORMAL	84	531	660	54955	.012	.011	1.404	13.09	569.50	2.25	19.71	9.72	10.00	0.0230
MILITARY	100	953	1100	70946	.016	.015	1.774	13.97	467.33	3.00	36.69	24.11	12.58	0.0231

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL NOX	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SOX
IDLE	6.86	115.81	2935	1.60	0.17	1.43	1.51	25.5	646	0.35	0.04	0.32	0.18
NORMAL	9.65	49.26	3056	2.80	1.38	1.42	0.43	32.5	2017	1.85	0.91	0.94	0.53
MILITARY	0.51	29.84	3087	3.85	2.53	1.32	0.56	12.8	3396	4.23	2.78	1.45	0.88

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0046

SET 1492-004-1275

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

ENGINE 20 NUMBER 0
TEST LOCATION : TELEUTYNE, NEU
TEST CELL NUMBER : 2
TEST CELL OPERATOR : K
SCOTT SUPERVISOR : ZGT
INSTRUMENT OPERATOR : PM
SMOKE OPERATOR : 00

TEST DATE : 4/11/75

SCOTT TEST NUMBER 200 TYPE A

ENGINE TYPE & MODEL : J85-5
ENGINE SERIAL # : 232078
TOTAL ENGINE TIME : 00 HRS.
PERFORMANCE TEST RESULTS : PASS

AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL. TIME) : START 950 FINISH 1130
INLET AIR TEMP. (DEG. F) : 41.0
ATMOSPHERIC PRESS. (IN. HG) : 28.8
RELATIVE HUMIDITY (%) : 68
INLET AIR HUMIDITY : 0.0038
(GM H2O/GM DRY AIR) : 0.0038

FUEL ANALYSIS :
SAMPLE # : 3
TYPE : JP-4
WT. % CARBON : 85.58
WT. % HYDROGEN : 14.32
WT. % SULFUR : 0.04
H/C RATIO-ATM. : 2.01
C/H RATIO-MASS : 5.98

TEST MODE	WATER POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPH	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE W/A
IDLE	46	80	450			.012		446.81	2062.91	2.11	9.38	1.23	8.15	0.00
NORMAL	92	1450	1410		.010			67.63	428.09	2.02	14.84	4.28	10.57	0.00
MILITARY	100	2710	2720		.018			27.02	517.89	3.63	28.45	17.02	11.43	0.0231

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	NOX	FUEL	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SOX
IDLE	31.05	172.93	2179	1.29	1.29	.017	1.12	13.97	77.8	1250	0.58	0.08	0.50	0.30
NORMAL	3.74	41.30	3000	2.35	0.64	1.07	1.07	5.27	58.2	4315	3.32	0.96	2.36	1.13
MILITARY	0.84	28.07	3009	2.53	1.51	1.02	1.02	2.28	76.3	8402	6.89	4.12	2.77	2.17

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

REPORT DATE 12/15/75
USAF CONTRACT F29681-75-C-0046

SET 1492-DW4-1275

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

ENGINE 20 NUMBER 4

TEST DATE : 4/14/75

SCOTT TEST NUMBER 210 TYPE H

TEST LOCATION : TELEUTYNE, NEU
TEST CELL NUMBER : 2
TEST CELL OPERATOR : K
SCOTT SUPERVISOR : ZGI
INSTRUMENT OPERATOR : PM
SMOKE OPERATOR : DU

ENGINE TYPE & MODEL : J85-5
ENGINE SERIAL # : 232810
TOTAL ENGINE TIME : 44 HRS.
PERFORMANCE TEST RESULTS : PASS

AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

FUEL ANALYSIS :
SAMPLE # : 3
TYPE : JP-4
WT.% CARBON : 85.58
WT.% HYDROGEN : 14.32
WT.% SULFUR : 0.04
H/C RATIO-ATM. : 2.01
C/H RATIO-MASS : 5.98

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 100 DEG.F
LENGTH : 70 FT.

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL.TIME) : START 845 FINISH 950
INLET AIR TEMP. (DEG.F) : 47.0 47.0
ATMOSPHERIC PRESS. (IN.HG) : 28.60 28.60
RELATIVE HUMIDITY (%) : 100 100
INLET AIR HUMIDITY :
(GM H2O/GM DRY AIR) : 0.0071 0.0071

TEST MODE	RATED POWER %	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE #/A
IDLE	40	60	450	1450	.012	.012		632.06	270.23	2.21	8.92	1.08	7.84	0.023
NORMAL	92	1400	1450	1450	.011	.011		64.07	470.65	2.16	14.29	9.64	4.66	0.023
MILITARY	100	2500	2600	2600	.010	.010		30.11	493.42	3.57	27.07	16.47	10.60	0.023
MAX AB	100	3715	5320	5320	.004	.004		9.21	1472.32	12.19	73.87	50.61	23.26	0.022

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL	NOX	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SOA
IDLE	24.96	101.44	2771	1.17	1.03	0.14	1.03	13.03	81.6	1247	0.53	0.06	0.46	0.36
NORMAL	3.31	42.50	3060	2.12	0.69	1.43	0.69	4.00	61.6	4436	3.07	2.07	1.00	1.16
MILITARY	0.95	27.10	3090	2.45	0.96	1.49	0.96	2.51	71.7	8158	6.46	3.93	2.53	2.11
MAX AB	0.09	23.01	3090	1.96	0.62	1.34	0.62	0.71	100.1	25774	16.33	11.19	5.14	6.65

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-D04-1275

REPORT DATE 12/15/75
USAF CONTRACT F29681-75-C-0040

SCOTT TEST NUMBER 22, TYPE C
ENGINE TYPE & MODEL : J85-5
ENGINE SERIAL # : 27281B
TOTAL ENGINE TIME : 47.0 HRS.
PERFORMANCE TEST RESULTS : PASS
AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

TEST DATE : 4/14/75

ENGINE 2, NUMBER 3

TEST LOCATION : TELEDYNE-NEU
TEST CELL NUMBER : 2
TEST CELL OPERATOR : K
SCOTT SUPERVISOR : LGT
INSTRUMENT OPERATOR : PM
SMOKE OPERATOR : DU

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG.F) : 84.5 95.0
ATMOSPHERIC PRESS. (IN. HG) : 28.68 28.68
RELATIVE HUMIDITY (%) : 100 100
INLET AIR HUMIDITY : 0.0071 0.0071
(GM H2O/GM DRY AIR) : 0.0071 0.0071

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 388 DEG.F
LENGTH : 70 FT.

FUEL ANALYSIS :
SAMPLE # : 3
TYPE : JP-4
WT. % CARBON : 85.58
WT. % HYDROGEN : 14.32
WT. % SULFUR : 0.04
H/C RATIO-ATM. : 2.01
C/H RATIO-MASS : 5.98

TEST MODE	RATED POWER	THRUST	FUEL FLOW	AIR FLOW	F/A ACT	F/A CALC	EPH	THC	CO	CO2	NOX	NO	NO2	SMOKE
		#	#/HR	#/HR				PPMC	PPM	%	PPM	PPM	PPM	SN
IDLE	46	80	450			.013		675.33	2373.80	2.29	9.19	1.02	8.17	0.00
NORMAL	92	1460	1450		.011			63.03	473.52	2.20	14.33	10.52	3.81	0.00
MILITARY	100	2590	2640		.018			26.22	494.51	3.58	26.79	16.65	10.14	2.50

EXHAUST MASS EMISSION INDICES :

	THC	CO	CU	FUEL FLOW	NOX	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SOX
				#/HR				PPMC	PPM	%	PPM	PPM	PPM	PPM
IDLE	29.74	102.55		2767	1.16	0.13	1.03	13.38	82.1	1245	0.52	0.06	0.46	0.36
NORMAL	3.24	41.97		3061	2.09	1.53	0.55	4.78	60.9	4438	3.02	2.22	0.80	1.16
MILITARY	0.83	27.19		3091	2.42	1.50	0.92	2.18	71.8	8159	6.39	3.97	2.42	2.11

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-004-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0040

SCOTT TEST NUMBER 23, TYPE H

TEST DATE : 4/15/75

ENGINE 2, NUMBER 10

ENGINE TYPE & MODEL : J45-3H
ENGINE SERIAL # : 232437
TOTAL ENGINE TIME : 00 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : TELETYPE, NEW
TEST CELL NUMBER : 2
TEST CELL OPERATOR : MAG
SCOTT SUPERVISOR : GRI
INSTRUMENT OPERATOR : MA
SMOKE OPERATOR : DU

AIR FLOW MEASUREMENT METHOD : BELL-MOULT

TEST ENVIRONMENTAL CONDITIONS :

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 100 DEG.F
LENGTH : 70 FT.

FUEL ANALYSIS :
SAMPLE # : 3
TYPE : JP-4
WT. % CARBON : 85.58
WT. % HYDROGEN : 14.32
WT. % SULFUR : 0.01
H/C RATIO-ATM : 2.01
C/H RATIO-MASS : 5.95

TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG.F) : 845 1447
ATMOSPHERIC PRESS. (IN. HG) : 59.0 63.0
RELATIVE HUMIDITY (%) : 28.74 28.88
INLET AIR HUMIDITY : 67 65
(GM H2O/GM DRY AIR) : 0.0074 0.0082

TEST MODE	RATED POWER %	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN
IDLE	46	82	460			.013		548.31	227.76	2.28	9.47	3.32	6.14	0.00 0.023
NORMAL	92	1501	1555			.012		57.34	492.26	2.33	14.81	6.32	8.54	0.00 0.023
MILITARY	100	2613	2648			.018		19.31	586.05	3.61	28.53	18.15	10.38	0.00 0.023
MAX AB	100	3678	9220			.064		13.31	1693.92	12.24	70.65	48.51	22.14	0.00 0.023

EXHAUST MASS EMISSION INDICES :

	THC	CO	FUEL FLOW #/HR	NOX	NO	CO2	THC	CO	CO2	NOX	NO	NO2	SUA
IDLE	24.52	173.96	2795	1.21	0.43	0.79	11.28	40.0	1286	0.56	0.20	0.36	0.37
NORMAL	2.75	41.23	3063	2.04	0.87	1.17	4.28	44.1	4763	3.17	1.35	1.82	1.24
MILITARY	0.08	27.53	3091	2.55	1.62	0.93	1.59	72.7	8159	6.73	4.28	2.45	2.11
MAX AB	0.12	27.24	3092	1.87	1.28	0.58	1.01	223.9	25419	15.34	10.53	4.81	6.57

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

REPORT DATE 12/15/75
USAF CONTRACT F29681-75-C-0046

SEI 1492-DM4-1275

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

ENGINE 2, NUMBER 1A

TEST DATE : 4/15/75

SCOTT TEST NUMBER 24, TYPE C

ENGINE TYPE & MODEL : J85-SH
ENGINE SERIAL # : 272437
TOTAL ENGINE TIME : 00 HRS.
PERFORMANCE TEST RESULTS : PASS
AIR FLOW MEASUREMENT METHOD : BELL-MOUTH

TEST LOCATION : TELEDYNE-NEU
TEST CELL NUMBER : 2
TEST CELL OPERATOR : MAJ
SCOTT SUPERVISOR : ZGT
INSTRUMENT OPERATOR : PM
SMOKE OPERATOR : OU

FUEL ANALYSIS :
SAMPLE # : 3
TYPE : JP-4
WT.% CARBON : 85.58
WT.% HYDROGEN : 14.32
WT.% SULFUR : 0.04
H/C RATIO-ATM.: 2.81
C/H RATIO-MASS: 5.98

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 380 DEG.F
LENGTH : 70 FT.

TEST ENVIRONMENTAL CONDITIONS :
START FINISH
TEST TIME (MIL.TIME) : 845 1000
INLET AIR TEMP.(DEG.F) : 59.0 63.0
ATMOSPHERIC PRESS.(IN.HG) : 28.74 28.88
RELATIVE HUMIDITY (%) : 67 65
INLET AIR HUMIDITY :
(GM H2O/GM DRY AIR) : 0.0074 0.0082

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPM	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SN	SMOKE -- W/A
MILITARY	100	2613	2648			0.018		18.72	582.24	3.61	27.53	17.79	9.75	0.00	0.0264

EXHAUST MASS EMISSION INVOICES :

	THC	CO	CU	FUEL	NOX	NO2	SOX
MILITARY	4.58	27.37	3091	2.46	1.59	0.87	2.11

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

ENGINE J60-P5B

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-005-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0040

SCOTT TEST NUMBER 25, TYPE B

TEST DATE : 5/ 2/75

ENGINE 3, NUMBER 1

ENGINE TYPE & MODEL : J48-P5

TEST LOCATION : ANDREWS

ENGINE SERIAL # : 637067

TEST CELL NUMBER : 70001

TOTAL ENGINE TIME : 0 HRS.

SCOTT SUPERVISOR : WMS

PERFORMANCE TEST RESULTS : PASS

INSTRUMENT OPERATOR : FAL

AIR FLOW MEASUREMENT METHOD : BELLMOUTH

SMOKE OPERATOR : UJO

TEST ENVIRONMENTAL CONDITIONS :

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 100 DEG.F
LENGTH : 25 FT.

START FINISH
1200 1300

TEST TIME (MIL.TIME) :

INLET AIR TEMP.(DEG.F) : 63.0

ATMOSPHERIC PRESS.(IN.MG) : 29.82

RELATIVE HUMIDITY (%) : 74

INLET AIR HUMIDITY -

(GM H2O/GM DRY AIR) : 0.0091

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPH	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE SN
IDLE	43		455	43275	.011	.007	1.004	198.39	569.47	1.42	6.82	0.43	6.39	1.50
INTERMED. 1	75		1025	122341	.008	.007	1.393	16.37	216.19	1.41	9.13	5.14	3.99	3.50
INTERMED. 2	85		1450	133027	.011	.008	1.662	5.36	133.86	1.61	13.71	10.57	3.15	10.50
NORMAL	97		2125	162065	.013	.010	2.186	1.52	61.33	2.10	25.20	21.85	3.35	11.75
MILITARY	103		2710	171321	.016	.012	2.481	1.19	44.98	2.50	35.86	31.81	4.05	10.50

EXHAUST MASS EMISSION INDICES :

	THC	CO	CU	FUEL NUA	CO2	NO2	THC	CO	CU	CO2	NOX	NO	NO2	SUA
IDLE	15.21	76.22	2981	1.50	0.89	1.40	6.92	34.7	1356	0.68	0.68	0.04	0.64	0.27
INTERMED. 1	1.31	30.22	3091	2.10	1.14	0.92	1.34	31.0	3168	2.15	2.15	1.21	0.94	0.51
INTERMED. 2	0.38	16.31	3116	2.77	2.13	0.63	0.54	23.7	4518	4.01	4.01	3.09	0.92	0.57
NORMAL	0.08	5.81	3133	3.92	3.40	0.52	0.18	12.3	6657	8.33	8.33	7.23	1.11	1.27
MILITARY	0.05	3.50	3136	4.64	4.16	0.53	0.15	9.7	8500	12.72	12.72	11.29	1.43	1.52

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0046

SET 1492-D05-1275

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

ENGINE 3. NUMBER 5

TEST DATE : 5/12/75

SCOTT TEST NUMBER 29. TYPE H

TEST LOCATION : ANDREWS
TEST CELL NUMBER : P0001
TEST CELL OPERATOR : FC
SCOTT SUPERVISOR : LGI
INSTRUMENT OPERATOR : WHP
SMOKE OPERATOR : FAL

ENGINE TYPE & MODEL : J60-P50
ENGINE SERIAL # : 630976
TOTAL ENGINE TIME : 0 HRS.
PERFORMANCE TEST RESULTS : PASS

AIR FLOW MEASUREMENT METHOD : BELLMOUTH

FUEL ANALYSIS :
SAMPLE # : 4
TYPE : JP-4
WT. % CARBON : 85.72
WT. % HYDROGEN : 14.14
WT. % SULFUR : 0.03
H/C RATIO-ATM. : 1.94
C/H RATIO-MASS : 6.06

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 340 DEG.F
LENGTH : 5 FT.

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIN. TIME) : START FINISH
INLET AIR TEMP. (DEG.F) : 930 1016
ATMOSPHERIC PRESS. (IN. HG) : 71.2 70.0
RELATIVE HUMIDITY (%) : 29.67 55
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0101 0.0107

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN
1000	43		460	54123	.008	.003	1.091	85.69	541.00	1.57	6.72	0.90	5.82	1.50 0.023
INTERMED. 1	75		1000	119627	.008	.007	1.390	8.52	197.59	1.52	10.59	7.90	2.69	5.25 0.023
INTERMED. 2	85		1450	132743	.011	.008	1.681	4.53	124.90	1.65	15.38	12.32	3.06	14.75 0.023
NORMAL	97		2175	157493	.014	.011	2.138	3.08	60.04	2.19	28.09	23.44	4.65	22.00 0.023
MILITARY	103		2500	168374	.015	.013	2.449	3.45	47.59	2.64	39.89	33.46	6.42	18.50 0.023

EXHAUST MASS EMISSION INDICES :

	* / 1000 #		* / MK		* / MK		* / MK		* / MK		* / MK		* / MK	
	THC	CU	CU2	FUEL	NO	NO2	IHC	CO	CU2	NOX	NO	NO2	SUA	
1000	6.02	66.46	3021	1.35	0.18	1.17	2.77	70.6	1390	0.62	0.08	0.54	0.28	
INTERMED. 1	0.63	25.68	3100	2.26	1.69	0.57	0.63	25.7	3100	2.26	1.69	0.57	0.60	
INTERMED. 2	0.31	15.05	3110	3.04	2.44	0.61	0.45	21.8	4521	4.41	3.53	0.88	0.87	
NORMAL	0.16	5.48	3133	4.21	3.51	0.70	0.35	11.9	6815	9.16	7.64	1.51	1.30	
MILITARY	0.15	3.60	3136	4.95	4.15	0.80	0.37	9.0	7841	12.38	10.39	1.99	1.50	

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-005-1275

REPORT DATE 12/15/75
USAF CONTRACT F29681-75-C-0046

SCOTT TEST NUMBER 30. TYPE A

TEST DATE : 5/13/75

ENGINE 3. NUMBER 4

ENGINE TYPE & MODEL : J64-PS8
ENGINE SERIAL # : 636920
TOTAL ENGINE TIME : 1640 HRS.
PERFORMANCE TEST RESULTS : FAIL

TEST LOCATION : ANDREWS
TEST CELL OPERATOR : FC
SCOTT SUPERVISOR : ZGI
INSTRUMENT OPERATOR : WMP
SMOKE OPERATOR : FAL

AIR FLOW MEASUREMENT METHOD : BELLMOUTH

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG. F) : 95 1125
ATMOSPHERIC PRESS. (IN. HG) : 29.63 29.64
RELATIVE HUMIDITY (%) : 82 55
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0115 0.0118

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 340 DEG. F
LENGTH : 35 FT.

FUEL ANALYSIS :

SAMPLE # : 4
TYPE : JP-4
WT. % CARBON : 85.72
WT. % HYDROGEN : 14.14
WT. % SULFUR : 0.03
H/C RATIO-ATM. : 1.98
C/H RATIO-MASS : 6.06

TEST MODE	WATER POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SHRINK SN	W/A
IDLE	43		490	55452	0.09	0.08	1.079	123.20	582.14	1.52	7.16	0.51	6.65	0.25	0.0231
NORMAL	97		2025	159749	0.13	0.11	2.176	2.54	63.64	2.20	27.32	22.21	5.11	17.25	0.0231
MILITARY	103		2575	160451	0.15	0.13	2.461	2.34	51.31	2.60	37.80	30.88	6.91	17.75	0.0231

EXHAUST MASS EMISSION INDICES :

	THC	CO	CU	FUEL NOX	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SOX
IDLE	0.86	73.10	3003	1.58	0.11	1.37	4.34	35.8	1472	0.72	0.05	0.67	0.29
NORMAL	0.13	5.70	3133	4.07	3.31	0.76	0.27	11.7	6344	8.25	6.71	1.54	1.21
MILITARY	0.10	3.94	3136	4.77	3.90	0.87	0.26	10.1	8075	12.28	10.03	2.25	1.54

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-005-1275

REPORT DATE 12/15/75
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ENGINE 3. NUMBER 7

TEST DATE : 5/15/75

SCOTT TEST NUMBER 31. TYPE H

ENGINE TYPE & MODEL : J48-P50
ENGINE SERIAL # : 637064
TOTAL ENGINE TIME : 2044 HRS.
PERFORMANCE TEST RESULTS : PASS

AIR FLOW MEASUREMENT METHOD : BELLMOUTH

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG.F) : 1327 1514
ATMOSPHERIC PRESS. (IN. HG) : 79.5 78.8
RELATIVE HUMIDITY (%) : 29.64 29.64
INLET AIR HUMIDITY - 46
(GM H2O/GM DRY AIR) : 0.0102 0.0095

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 7-8 DEG.F
LENGTH : 55 FT.

FUEL ANALYSIS :
SAMPLE # : 4
TYPE : JP-4
WT. % CARBON : 85.72
WT. % HYDROGEN : 14.14
WT. % SULFUR : 0.03
H/C RATIO-ATM. : 1.94
C/H RATIO-MASS : 0.05

TEST MODE	RATED POWER %	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPH	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NU2 PPM	SHUKE -- S/N
IDLE	43		488	55162	.009	.008	1.055	92.66	528.87	1.61	8.83	0.93	7.10	0.67 0.823
INTERMED. 1	75		975	118173	.008	.008	1.361	6.57	186.24	1.68	12.21	8.97	3.24	3.75 0.823
INTERMED. 2	85		1485	130956	.011	.008	1.645	3.89	124.82	1.71	16.56	13.80	3.56	9.75 0.823
NORMAL	97		2183	156878	.013	.010	2.100	2.59	88.62	2.88	27.59	22.79	4.80	18.33 0.823
MILITARY	103		2458	166391	.015	.012	2.413	0.97	47.28	2.51	38.76	32.55	6.22	20.00 0.823

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL	NOX	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SOX
IDLE	6.34	63.24	3025	1.58	1.39	0.18	1.39	3.05	30.3	1452	0.76	0.89	0.67	0.29
INTERMED. 1	0.44	21.95	3107	2.36	0.63	1.74	0.63	0.43	21.4	3029	2.31	1.69	0.61	0.58
INTERMED. 2	0.26	14.50	3119	3.16	0.68	2.48	0.68	0.36	20.4	4382	4.44	3.49	0.95	0.84
NORMAL	0.14	5.81	3133	4.34	0.76	3.59	0.76	0.30	12.2	6579	9.12	7.53	1.59	1.26
MILITARY	0.04	3.75	3136	5.05	0.81	4.24	0.81	0.11	9.2	7684	12.38	10.40	1.99	1.47

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

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REPORT DATE 12/15/75
USAF CONTRACT F29681-75-C-0046

SCOTT TEST NUMBER 32, TYPE C

TEST DATE : 5/15/75

ENGINE 3, NUMBER 7

ENGINE TYPE & MODEL : J58-P50
ENGINE SERIAL # : 677064
TOTAL ENGINE TIME : 2440 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : ANDREWS
TEST CELL NUMBER : P6001
TEST CELL OPERATOR : FC
SCOTT SUPERVISOR : LGI
INSTRUMENT OPERATOR : WHM
SMOKE OPERATOR : FAL

AIR FLOW MEASUREMENT METHOD : BELLMOUTH

TEST ENVIRONMENTAL CONDITIONS :

START FINISH
TEST TIME (MIL.TIME) : 1327 1514
INLET AIR TEMP.(DEG.F) : 79.5 78.0
ATMOSPHERIC PRESS.(IN.HG) : 29.66 29.64
RELATIVE HUMIDITY (%) : 47 46
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0102 0.0095

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 330 DEG.F
LENGTH : 55 FT.

FUEL ANALYSIS :
SAMPLE # : 4
TYPE : JP-4
WT.% CARBON : 85.72
WT.% HYDROGEN : 14.14
WT.% SULFUR : 0.03
H/C RATIO-ATM. : 1.98
C/H RATIO-MASS : 6.86

TEST MODE	WATER POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN W/A
IDLE	43		480	55162	.009	.008	1.055	102.40	557.88	1.60	8.43	0.78	7.64	1.50 0.0262
INTERMED. 1	75		975	118173	.008		1.361							
INTERMED. 2	85		1485	138956	.011		1.645							
NORMAL	97		2188	156070	.013	.012	2.180	2.00	64.65	2.42	31.69	25.99	5.70	20.50 0.0262
MILITARY	103		2450	166391	.015	.015	2.413	1.44	48.17	2.98	46.31	38.37	7.95	22.25 0.0262

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL NOX	NO	NO2	SOA
IDLE	6.73	63.99	3023	1.59	0.15	1.44	
INTERMED. 1							
INTERMED. 2	0.10	5.33	3134	4.29	3.52	0.77	
NORMAL	0.06	3.23	3137	5.10	4.23	0.80	
MILITARY							

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-105-1275

REPORT DATE 12/15/75
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SCOTT TEST NUMBER 36, TYPE F

TEST DATE : 5/24/75

ENGINE 3, NUMBER 10

ENGINE TYPE & MODEL : J50-P30
ENGINE SERIAL # : 636975
TOTAL ENGINE TIME : 2778 HRS.
PERFORMANCE TEST RESULTS : FAIL

TEST LOCATION : ANDREWS
TEST CELL NUMBER : P6001
TEST CELL OPERATOR : FC
SCOTT SUPERVISOR : MHS
INSTRUMENT OPERATOR : FAL
SMOKE OPERATOR : UJU

AIR FLOW MEASUREMENT METHOD : BELLMOUTH

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL. TIME) : START FINISH
1305 1413
INLET AIR TEMP. (DEG. F) : 80.0 82.0
ATMOSPHERIC PRESS. (IN. HG) : 29.76 29.74
RELATIVE HUMIDITY (%) : 35 37
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 8.0077 8.0085

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG. F
LENGTH : 55 FT.

FUEL ANALYSIS :
SAMPLE # : 4
TYPE : JP-4
WT. % CARBON : 85.72
WT. % HYDROGEN : 14.14
WT. % SULFUR : 0.03
H/C RATIO-ATM. : 1.93
C/H RATIO-MASS : 0.06

TEST MODE : RATED POWER : 43 57
IDLE NORMAL

FUEL FLOW #/HR : 445 1750

AIR FLOW #/HR : 445 1750

F/A ACT F/A CALC

EPH

THC PPMC

CO PPM

CU2 %

NOX PPM

NO PPM

NO2 PPM

SMOKE #/A

EXHAUST MASS EMISSION INVOICES :

THC CO2 NOX FUEL NO NO2

THC CO2 NOX

NO NO2 SUX

IDLE NORMAL

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

ENGINE J60-P3

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0040

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SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
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ENGINE 3. NUMBER 2

TEST DATE : 5/ 5/75

SCOTT TEST NUMBER 26. TYPE H

TEST LOCATION : ANDREWS
TEST CELL NUMBER : P6001
TEST CELL OPERATOR : FC
SCOTT SUPERVISOR : WMS
INSTRUMENT OPERATOR : FAL
SMOKE OPERATOR : DJU

ENGINE TYPE & MODEL : J60-P3
ENGINE SERIAL # : 637236
TOTAL ENGINE TIME : 0 HRS.
PERFORMANCE TEST RESULTS : PASS
AIR FLOW MEASUREMENT METHOD : BELLMOUTH

FUEL ANALYSIS :
SAMPLE # : 4
TYPE : JP-4
WT.% CARBON : 85.72
WT.% HYDROGEN : 14.14
WT.% SULFUR : 0.03
H/C RATIO-ATM. : 1.90
C/H RATIO-MASS : 6.06

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG.F
LENGTH : 25 FT.

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL.TIME) : START 1430 FINISH 1530
INLET AIR TEMP.(DEG.F) : 63.0
ATMOSPHERIC PRESS.(IN.HG) : 29.57
RELATIVE HUMIDITY (%) : 69
INLET AIR HUMIDITY - (GM H2O/GM DRY AIR) : 0.0006

TEST MODE	RATED POWER %	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE #/A
IDLE	43		480	53185	0.009	0.007	1.074	148.00	558.45	1.40	7.47	6.62	0.85	1.50 0.0231
INTERMED. 1	75		1025	96070	0.011	0.008	1.371	10.83	225.42	1.67	13.59	11.93	1.66	10.50 0.0231
INTERMED. 2	85		1550	135447	0.011	0.009	1.724	5.01	137.41	1.77	18.07	16.41	1.67	10.75 0.0231
NORMAL	97		2125	160080	0.013	0.011	2.215	2.14	68.30	2.34	29.03	26.78	2.20	21.00 0.0231
MILITARY	103		2625	167265	0.016	0.014	2.468	0.92	52.50	2.81	39.22	36.53	2.69	22.50 0.0231

EXHAUST MASS EMISSION INOICES :

	THC	CO	CO2	# / 1000# FUEL	THC	CO	CO2	# / HR	NOX	NO	NO2	SOA
IDLE	11.49	75.68	2992	1.64	5.52	36.3	1436	0.80	0.71	0.09	0.29	
INTERMED. 1	0.73	26.02	3098	2.64	0.75	27.3	3176	2.70	2.37	0.33	0.61	
INTERMED. 2	0.32	15.45	3117	3.33	0.58	23.9	4832	5.17	4.69	0.48	0.73	
NORMAL	0.10	5.01	3133	4.06	0.25	12.3	6657	8.63	7.96	0.67	1.27	
MILITARY	0.04	3.73	3136	4.58	0.10	9.8	8233	12.01	11.19	0.82	1.57	

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
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SCOTT TEST NUMBER 28, TYPE H

TEST DATE : 5/ 8/75

ENGINE 3, NUMBER 4

ENGINE TYPE & MODEL : J69-P3

TEST LOCATION : ANDREWS

ENGINE SERIAL # : 636815

TEST CELL NUMBER : P6001

TOTAL ENGINE TIME : 2619 HRS

TEST CELL OPERATOR : FC

PERFORMANCE TEST RESULTS : PASS

SCOTT SUPERVISOR : WMS

AIR FLOW MEASUREMENT METHOD : BELLMOUIM

INSTRUMENT OPERATOR : FAL

SMOKE OPERATOR : DUJ

TEST ENVIRONMENTAL CONDITIONS :

SAMPLE LINE :

TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG.F) : 1012 1204
ATMOSPHERIC PRESS. (IN.HG) : 64.0 74.0
RELATIVE HUMIDITY (%) : 70 40
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0009 0.0071

FLOW RATE : 23 LPM
TEMPERATURE : 150 DEG.F
LENGTH : 5 FT.

FUEL ANALYSIS :

SAMPLE # : 4
TYPE : JP-4
WT.% CARBON : 85.72
WT.% HYDROGEN : 14.14
WT.% SULFUR : 0.03
H/C RATIO-ATM.: 1.98
C/H RATIO-MASS: 6.06

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN	W/A
IDLE	43		460	51574	0.09	0.08	1.067	121.54	542.01	1.57	5.28	1.17	4.11	1.00	0.023
NORMAL	97		2010	158685	0.13	0.11	2.159	1.07	58.30	2.22	29.89	25.62	3.47	13.25	0.023
MILITARY	103		2525	168247	0.15	0.13	2.438	1.01	48.07	2.58	39.69	35.61	4.09	17.50	0.025

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SUA
IDLE	8.48	60.07	3015	1.06	0.23	0.02	3.90	70.4	1307	0.49	0.11	0.38	0.20
NORMAL	0.10	5.23	3134	4.29	3.78	0.51	0.19	10.5	6299	0.62	7.59	1.03	1.20
MILITARY	0.04	3.72	3136	5.04	4.52	0.52	0.11	9.4	7919	12.73	11.42	1.31	1.51

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

REPORT DATE 12/15/75
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SCOTT ENVIRONMENTAL TECHNOLOGY INC.
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ENGINE A. NUMBER 5
TEST LOCATION : ANDREWS
TEST CELL NUMBER : 70001
TEST CELL OPERATOR : FC
SCOTT SUPERVISOR : WMS
INSTRUMENT OPERATOR : FAL
SMOKE OPERATOR : UJU

TEST DATE : 5/27/75

SCOTT TEST NUMBER 33. TYPE A

ENGINE TYPE & MODEL : J60-P3
ENGINE SERIAL # : 617236
TOTAL ENGINE TIME : 2144 HRS.
PERFORMANCE TEST RESULTS : MASS

AIR FLOW MEASUREMENT METHOD : BELLMOUTH

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG.F) : 83.0 87.0
ATMOSPHERIC PRESS. (IN. HG) : 29.56 29.54
RELATIVE HUMIDITY (R) : 59 54
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0144 0.0152

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG.F
LENGTH : 45 FT.

FUEL ANALYSIS :
SAMPLE # : 4
TYPE : JP-4
WT. % CARBON : 85.72
WT. % HYDROGEN : 14.14
WT. % SULFUR : 0.03
H/C RATIO-ATM. : 1.98
C/H RATIO-MASS : 6.06

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPH	THC PPM	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE #/A
IDLE	43		420	53732	0.008	0.008	1.064	108.96	534.42	1.63	7.64	0.01	6.83	0.8231
NORMAL	97		1750	152762	0.011	0.011	2.076	4.50	63.29	2.13	24.24	20.43	3.81	20.17
MILITARY	103		2125	163597	0.013	0.012	2.360	5.00	53.64	2.48	32.00	27.74	4.34	22.50

EXHAUST MASS EMISSION INVOICES :

	THC	CO	CO2	FUEL NOX	NO	NO2	# / HR	THC	CO	CO2	NOX	NO	NO2	SOA
IDLE	7.37	0.10	3023	1.46	0.10	1.33		3.10	26.5	1270	0.62	0.07	0.56	0.25
NORMAL	0.25	0.03	3132	3.73	3.14	0.59		0.43	10.4	5481	6.53	5.50	1.03	1.05
MILITARY	0.23	0.02	3135	4.24	3.07	0.57		0.49	9.2	6602	9.01	7.00	1.22	1.27

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
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ENGINE 3, NUMBER 4

TEST DATE : 5/27/75

TEST LOCATION : ANDREWS

ENGINE TYPE & MODEL : J48-P3
ENGINE SERIAL # : 636786
TOTAL ENGINE TIME : 1394 HRS.
PERFORMANCE TEST RESULTS : PASS
AIR FLOW MEASUREMENT METHOD : BELLMOUTH

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL. TIME) : 1900
INLET AIR TEMP. (DEG.F) : 80.0
ATMOSPHERIC PRESS. (IN.HG) : 29.50
RELATIVE HUMIDITY (%) : 50
INLET AIR HUMIDITY :
(GM H2O/GM DRY AIR) : 0.0127

FUEL ANALYSIS :
SAMPLE # : 4
TYPE : JP-4
WT.% CARBON : 85.72
WT.% HYDROGEN : 14.14
WT.% SULFUR : 0.03
H/C RATIO-ATM. : 1.90
C/H RATIO-MASS : 6.06

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 100 DEG.F
LENGTH : 55 FT.

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL. TIME) : 1900
INLET AIR TEMP. (DEG.F) : 80.0
ATMOSPHERIC PRESS. (IN.HG) : 29.50
RELATIVE HUMIDITY (%) : 50
INLET AIR HUMIDITY :
(GM H2O/GM DRY AIR) : 0.0127

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPH	THC PPM	CO	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN	W/A
IDLE	43		445	54124	.008	.008	1.000	91.60	53.23	1.55	7.43	1.11	6.31	2.75	0.823
INTERMED. 1	75		925	115345	.008	.008	1.387	6.55	20.35	1.73	12.21	8.51	3.70	8.75	0.823
INTERMED. 2	85		1320	131328	.010	.009	1.600	2.47	12.48	1.74	15.88	12.54	3.35	14.00	0.823
NORMAL	97		1900	151614	.013	.010	2.073	0.88	78.20	2.11	23.70	20.16	3.54	19.00	0.823
MILITARY	103		2250	161355	.014	.012	2.379	1.36	55.43	2.48	31.76	27.76	3.99	21.50	0.823

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SUA
IDLE	4.51	66.20	3020	1.51	0.23	1.29	2.98	29.5	1344	0.67	0.10	0.57	0.27
INTERMED. 1	0.43	22.80	3105	2.29	1.60	0.69	0.40	21.1	2872	2.12	1.48	0.64	0.55
INTERMED. 2	0.16	13.99	3120	2.98	2.35	0.63	0.21	14.5	4118	3.93	3.10	0.83	0.79
NORMAL	0.05	6.03	3132	3.68	3.13	0.55	0.09	12.6	5950	6.90	5.94	1.04	1.14
MILITARY	0.06	4.40	3135	4.20	3.67	0.53	0.14	10.0	7054	9.45	8.26	1.19	1.35

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-005-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 350 TYPE C

TEST DATE : 5/21/75

ENGINE 10 NUMBER 9

ENGINE TYPE & MODEL : J48-P3

TEST LOCATION : ANDREWS

ENGINE SERIAL # : 676786

TEST CELL OPERATOR : P0001

TOTAL ENGINE TIME : 1394 HRS.

SCOTT SUPERVISOR : MMS

PERFORMANCE TEST RESULTS : PASS

INSTRUMENT OPERATOR : FAL

AIR FLOW MEASUREMENT METHOD : BELLMOUTH

SMOKE OPERATOR : DUU

TEST ENVIRONMENTAL CONDITIONS :

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 100 DEG.F
LENGTH : 65 FT.

FUEL ANALYSIS :

TEST TIME (MIL. TIME) : START
INLET AIR TEMP. (DEG.F) : 1900
ATMOSPHERIC PRESS. (IN. HG) : 29.50
RELATIVE HUMIDITY (%) : 52
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0116

SAMPLE # : 4
TYPE : JP-4
WT. % CARBON : 85.72
WT. % HYDROGEN : 14.14
WT. % SULFUR : 0.03
H/C RATIO-ATM. : 1.90
C/H RATIO-MASS : 6.86

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPK	THC PPM	CO PPM	CU2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN	W/A
IDLE	43		445	54124	0.008	0.008	1.088	190.39	502.17	1.64	7.79	8.94	6.86	3.25	0.0262
INTERMED. 1	75		925	115345	0.008	0.008	1.307								
INTERMED. 2	85		1320	131328	0.010	0.012	1.680	1.12	77.50	2.42	26.74	22.73	4.80	20.25	0.0262
NORMAL	97		1900	151614	0.013	0.014	2.073	1.54	50.05	2.80	35.44	30.76	4.67	22.25	0.0262
MILITARY	103		2250	16335	0.014	0.014	2.379								

EXHAUST MASS EMISSION INDICES :

	THC	CO	CU2	FUEL	NOX	NO	NO2	SOX
IDLE	6.73	65.79	3020	1.50	0.10	0.10	0.59	0.27
INTERMED. 1								
INTERMED. 2	0.05	0.30	3132	3.62	3.00	0.54		
NORMAL	0.06	0.19	3136	4.14	3.60	0.55		
MILITARY								

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

ENGINE J79-15

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

DEL 1492-006-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 34. TYPE B

TEST DATE : 6/16/75

ENGINE 4. NUMBER 1

ENGINE TYPE & MODEL : J79-15
ENGINE SERIAL # : 420655
TOTAL ENGINE TIME : 1400 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : KELLY AFB, TX
TEST CELL NUMBER : 45
TEST CELL OPERATOR : CUC
SCOTT SUPERVISOR : MMS
INSTRUMENT OPERATOR : PM
SMOKE OPERATOR : DUU

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL. TIME) : START 1240 FINISH 1455
INLET AIR TEMP. (DEG.F) : 90.0
ATMOSPHERIC PRESS. (IN. HG) : 29.85
RELATIVE HUMIDITY (%) : 47
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0147

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 400 DEG.F
LENGTH : 75 FT.

FUEL ANALYSIS :

SAMPLE # : 5
TYPE : JP-4
WT.% CARBON : 85.3/
WT.% HYDROGEN : 14.2/
WT.% SULFUR : 0.01
H/C RATIO-ATM.: 2.01
C/H RATIO-MASS: 5.95

TEST MODE	RATED POWER	THRUST	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPM	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SN	SMOKE -- w/A
IDLE	65	675	1125			0.085		49.48	325.87	0.96	7.33	4.79	2.54	15.65	0.0230
INTERMED. 1	75	1300	1500			0.084		37.26	120.12	0.72	7.12	4.62	2.50	26.63	0.0230
INTERMED. 2	93	1577	1745			0.111		17.12	39.46	2.33	39.94	34.05	5.89	63.45	0.0230
NORMAL	109	1724	2505			0.089		24.46	44.58	1.84	26.48	22.56	3.92	60.38	0.0230
MILITARY	100	1479	2000			0.113		15.39	34.49	2.57	60.29	51.53	8.76	60.27	0.0230
MID A3	100	12107	15458			0.023		183.60	1150.44	4.52	65.29	23.98	41.31	51.50	0.0230

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	# / 10 ³ H ₂	FUEL NOX	NO	NO2	SOA
IDLE	5.68	65.31	3017	2.41	1.58	1.77	0.94	0.22
INTERMED. 1	5.75	32.38	3069	3.15	2.05	3.25	1.76	0.32
INTERMED. 2	0.84	3.42	3124	5.62	4.79	41.25	6.08	1.47
NORMAL	1.51	4.01	3124	4.78	4.87	26.13	3.87	1.11
MILITARY	4.08	2.67	3129	7.67	6.55	68.07	9.89	1.77
MID A3	4.51	49.30	3046	4.60	1.69	28.13	48.44	3.33

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

REPORT DATE 12/15/75
USAF CONTRACT F29691-75-C-0046

DEL 1492-006-1275

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

ENGINE 4. NUMBER 2

TEST DATE : 5/19/75

SCOTT TEST NUMBER 39. TYPE 9

TEST LOCATION : KELLY AFB, TX
TEST CELL NUMBER : 45
TEST CELL OPERATOR : CDC
SCOTT SUPERVISOR : MMS
INSTRUMENT OPERATOR : PK
SMOKE OPERATOR : DUU

ENGINE TYPE & MODEL : J79-15
ENGINE SERIAL # : 474447
TOTAL ENGINE TIME : 1500 HRS.
PERFORMANCE TEST RESULTS : PASS

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

FUEL ANALYSIS :
SAMPLE # : 5
TYPE : JP-4
WT. % CARBON : 85.37
WT. % HYDROGEN : 14.27
WT. % SULFUR : 0.01
H/C RATIO-ATM. : 2.01
C/H RATIO-MASS : 5.98

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 100 DEG. F
LENGTH : 75 FT.

TEST ENVIRONMENTAL CONDITIONS :
START FINISH
TEST TIME (MIL. TIME) : 1400 1515
INLET AIR TEMP. (DEG. F) : 89.0 89.0
ATMOSPHERIC PRESS. (IN. HG) : 29.23 29.24
RELATIVE HUMIDITY (%) : 26 26
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0077 0.0077

TEST MODE	RATED POWER	IMPUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPH	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN
IDLE	65	676	1140			0.004		48.75	246.72	0.88	7.12	3.23	3.89	23.50
INTERMED. 1	75	1424	1540			0.004		15.44	103.74	0.85	8.69	5.96	2.73	42.75
INTERMED. 2	93	4785	7384			0.011		2.38	32.77	2.32	47.73	42.56	5.17	63.75
NORMAL	89	5987	5520			0.009		3.13	40.08	1.93	32.79	28.90	3.89	62.75
MILITARY	100	10330	5950			0.012		2.03	24.36	2.48	56.24	59.89	6.35	60.25
MAX 45	100	15141	31234			0.040		54.92	1784.48	7.79	73.33	40.39	32.93	43.00

EXHAUST MASS EMISSION RATES :

	THC	CO	CO2	NOX	NO2	THC	CO	CO2	NOX	NO2	SOA
IDLE	10.06	53.50	3024	2.54	1.39	11.46	61.1	3497	2.94	1.32	0.23
INTERMED. 1	1.03	25.02	3042	3.31	1.04	5.07	27.0	4702	5.09	3.49	0.31
INTERMED. 2	0.11	2.05	3131	0.72	0.73	0.83	21.0	23105	49.59	44.22	5.37
NORMAL	0.14	4.14	3120	5.56	0.64	1.02	22.9	17269	30.71	27.07	1.47
MILITARY	0.09	1.90	3132	0.76	0.04	0.04	17.5	28033	78.36	70.84	1.79
MAX 45	0.74	40.67	3063	3.01	1.35	20.59	1305.2	95674	94.15	51.86	0.24

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-1065-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0040

SCOTT TEST NUMBER 480 TYPE H

TEST DATE : 5/20/75

ENGINE 40 NUMBER 3

ENGINE TYPE & MODEL : J79-15
ENGINE SERIAL # : 434350
TOTAL ENGINE TIME : 1400 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : KELLY AFB, TX
TEST CELL NUMBER : 45
TEST CELL OPERATOR : M
SCOTT SUPERVISOR : MMS
INSTRUMENT OPERATOR : PK
SMOKE OPERATOR : UJU

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG. F) : 170 180
ATMOSPHERIC PRESS. (IN. HG) : 82.0 82.0
RELATIVE HUMIDITY (%) : 29.22 29.23
INLET AIR HUMIDITY : 52 52
(GM H2O/GM DRY AIR) : 0.0124 0.0124

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG. F
LENGTH : 75 FT.

FUEL ANALYSIS :
SAMPLE # : 5
TYPE : JP-4
WT. % CARBON : 85.31
WT. % HYDROGEN : 14.27
WT. % SULFUR : 0.01
H/C RATIO-ATM. : 2.01
C/H RATIO-MASS : 5.95

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPK	THC PPM	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE #/A
IDLE	65	653	1125			0.05		81.40	276.37	0.95		2.21		19.45
INTERMED. 1	75	1343	1475			0.05		14.18	90.40	1.02		4.43		42.30
INTERMED. 2	93	4729	7270			0.05		1.75	31.19	1.50		37.43	3.63	59.15
NORMAL	89	6557	5215			0.05		2.73	35.18	1.30		23.76	2.74	56.65
MILITARY	100	10557	4975			0.05		1.56	25.52	1.03		53.28	4.06	61.75
MAX AB	100	10577	32170			0.05		254.78	1692.53	6.05		38.12	29.30	30.25

EXHAUST MASS EMISSION INDICES :

	THC	CO	FUEL FLOW #/HR	CO2	F/A ACT	F/A CALC	EPK	THC	CO	CO2	NOX	NO	NO2	SMOKE
IDLE	9.41	55.01	3022			0.73		10.59	42.8	3.00		0.83		0.22
INTERMED. 1	1.58	19.28	3101			1.41		2.32	24.4	4.74		2.08		0.29
INTERMED. 2	0.13	3.94	3129			7.76	0.75	0.92	24.6	22.48	61.90	56.43	5.47	1.45
NORMAL	0.24	5.37	3126			5.96	0.69	1.24	24.8	16.34	34.60	31.09	3.59	1.04
MILITARY	0.10	2.77	3131			10.43	0.87	0.87	24.9	28.10	101.45	93.65	7.80	1.79
MAX AB	6.44	54.04	3038			2.01	1.54	149.91	1730.0	97.50	113.93	64.34	49.59	6.43

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0046

SET 1492-006-1275

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF T-JET ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

ENGINE 40 NUMBER 4
TEST LOCATION : KELLY AFB-1A
TEST CELL NUMBER : 45
TEST CELL OPERATOR : CDC
SCOTT SUPERVISOR : MHS
INSTRUMENT OPERATOR : PM
SMOKE OPERATOR : UJU

TEST DATE : 6/26/75

SCOTT TEST NUMBER 410 TYPE M

ENGINE TYPE & MODEL : J79-15
ENGINE SERIAL # : 440165
TOTAL ENGINE TIME : 300 HRS.
PERFORMANCE TEST RESULTS : PASS

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL-TIME) : START FINISH
INLET AIR TEMP. (DEG.F) : 84.0 95.0
ATMOSPHERIC PRESS. (INCH) : 78.0 78.0
RELATIVE HUMIDITY (+) : 64 29.40
INLET AIR HUMIDITY - 64
(34 H2O/100 DRY AIR) : 0.0133 0.0133

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG.F
LENGTH : 75 FT.

FUEL ANALYSIS :
SAMPLE # : 6
TYPE : JP-4
Wt.% CARBON : 85.72
Wt.% HYDROGEN : 14.27
Wt.% SULFUR : 0.02
H/C RATIO-ATM. : 2.00
C/H RATIO-MASS : 6.01

TEST MODE	WATER POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPK	THC PPMC	CO ppm	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN
10LE	65	673	1160			0.05		113.27	282.38	1.00		2.59		23.82
INTERMED. 1	75	1400	1534			0.03		23.52	90.26	0.68		4.55		38.20
INTERMED. 2	93	9140	7574			0.11		1.59	34.44	2.19		40.21	5.00	57.90
NORMAL	04	4850	5385			0.04		3.29	35.72	1.72		25.67	4.42	55.75
MILITARY	100	10445	4030			0.12		1.19	26.44	2.42		63.97	6.29	59.88
MAX AB	100	15577	32924			0.41		47.17	2756.39	7.72		45.79	27.86	29.85

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL NOX	F/A	THC	CO	CO2	NOX	NO	NO2	SMOKE
10LE	12.43	54.12	3019		0.02	14.42	42.8	3502		0.95		0.46
INTERMED. 1	3.09	20.07	3096		2.16	5.95	39.9	4722		3.30		0.51
INTERMED. 2	0.24	2.74	3133	6.76	0.01	0.63	20.7	23718	51.19	45.53	5.66	3.03
NORMAL	0.22	4.014	3131	6.45	0.04	1.18	22.3	16859	34.71	26.31	4.53	2.15
MILITARY	0.06	2.021	3134	8.64	7.79	0.49	19.5	27674	76.32	68.81	7.50	3.53
MAX AB	6.78	68.39	3012	3.49	1.07	253.23	2551.8	49157	98.83	61.45	37.39	13.16

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SEI 1492-006-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 42 TYPE M

TEST DATE : 6/25/75

ENGINE 4. NUMBER 5

ENGINE TYPE & MODEL : J77-15
ENGINE SERIAL # : 43001
TOTAL ENGINE TIME : 1300 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : KELLY AFB, TX
TEST CELL NUMBER : 45
TEST CELL OPERATOR : CDC
SCOTT SUPERVISOR : MMS
INSTRUMENT OPERATOR : PM
SMOKE OPERATOR : DUJ

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

TEST ENVIRONMENTAL CONDITIONS :

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 700 DEGS.F
LENGTH : 75 FT.

FUEL ANALYSIS :
SAMPLE # : 6
TYPE : JP-4
WT.% CARBON : 85.72
WT.% HYDROGEN : 14.27
WT.% SULFUR : 0.02
H/C RATIO-ATM. : 2.08
C/H RATIO-MASS : 6.01

TEST TIME (MIL. TIME) : START FINISH
1115 1300
INLET AIR TEMP. (DEGS.F) : 84.0 84.0
ATMOSPHERIC PRESS. (IN. HG) : 29.31 29.31
RELATIVE HUMIDITY (%) : 36 36
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0096 0.0096

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE #/A
IDLE	65	603	1125			0.005		103.55	255.49	0.92	7.10	3.37	3.73	23.67
INTERMED. 1	75	1302	1455			0.004		23.55	116.43	0.81	7.62	5.48	2.14	43.13
INTERMED. 2	93	4953	7525			0.011		4.00	30.76	2.34	46.93	43.41	3.52	64.25
NORMAL	69	6734	5330			0.009		5.74	37.41	1.85	30.49	28.02	2.46	82.63
MILITARY	100	10531	9980			0.012		5.00	23.40	2.50	65.27	60.46	4.81	61.30
MAX AB	100	15442	31992			0.038		947.24	1471.66	7.40	67.37	39.86	27.51	37.50

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL NOX	NO	NO2	CO2	NOX	NO	NO2	SUA
IDLE	12.39	53.37	3020	2.44	1.16	1.28	3397	2.74	1.30	1.44	0.45
INTERMED. 1	3.25	20.14	3085	3.02	2.17	0.84	4400	4.39	3.16	1.23	0.58
INTERMED. 2	4.24	2.62	3133	6.57	6.00	0.49	23576	49.44	45.73	3.71	3.01
NORMAL	4.35	3.90	3131	5.39	4.95	0.44	16592	28.55	26.24	2.31	2.12
MILITARY	0.23	1.90	3134	8.55	7.92	0.63	28145	76.82	71.15	5.67	3.59
MAX AB	14.18	38.40	3038	2.89	1.71	1.18	97205	92.52	54.74	37.78	12.78

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-006-1275

REPORT DATE 12/15/75
USAF CONTRACT F29601-75-C-0000

SCOTT TEST NUMBER 43, TYPE C

TEST DATE : 5/25/75

ENGINE #, NUMBER 3

ENGINE TYPE & MODEL : J79-15

TEST LOCATION : KELLY AFB, TX

ENGINE SERIAL # : 430001

TEST CELL NUMBER : 45

TOTAL ENGINE TIME : 1300 HRS.

TEST CELL OPERATOR : CDC

PERFORMANCE TEST RESULTS : PASS

SCOTT SUPERVISOR : WMS

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

INSTRUMENT OPERATOR : PH

SMOKE OPERATOR : DUJ

TEST ENVIRONMENTAL CONDITIONS :

SAMPLE LINE :

FUEL ANALYSIS :

TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG. F) : 84.0 84.0
ATMOSPHERIC PRESS. (IN. HG) : 29.30 29.31
RELATIVE HUMIDITY (%) : 30 38
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0096 0.0096

FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG. F
LENGTH : 75 FT.

SAMPLE # : 6
TYPE : JP-4
WT. % CARBON : 85.72
WT. % HYDROGEN : 14.21
WT. % SULFUR : 0.02
H/C RATIO-ATM. : 2.86
C/H RATIO-MASS : 6.01

TEST MODE RATED THRUST FUEL FLOW AIR FLOW
POWER # #/HR #/HR #/HR
IDLE 65 683 1125
NORMAL 89 6734 5307
MILITARY 100 18531 5900
MAX 100 15409 32113

THC PPM 146.32 357.72 4.76 3.95 38.56
CO PPM 46.47 29.10 2081.33
CO2 % 1.40 2.44 3.43 11.90
NOX PPM 9.65 38.47 77.35 106.16
NO PPM 3.96 35.82 70.79 77.75
NO2 PPM 5.69 3.46 6.55 28.41
SMOKE --
W/A 0.0262 0.0262 0.0262 0.0262

EXHAUST MASS EMISSION INDICES :

THC CO2 CO
IDLE 11.54 49.25 3029 2.18 0.70 1.29
NORMAL 4.22 3.83 3131 5.16 4.70 0.46
MILITARY 4.15 1.91 3134 8.36 7.55 0.71
MAX 4.36 34.10 3083 2.86 2.89 0.76

THC CO2 CO
IDLE 12.98 55.4 3007 2.46 1.01 0.45
NORMAL 1.18 24.3 16595 27.36 24.90 2.12
MILITARY 1.34 17.2 28146 75.05 68.69 3.59
MAX 11.62 1095.0 99010 91.75 67.20 12.53

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-086-1275

REPORT DATE 12/15/75
USAF CONTRACT F29681-75-C-0040

SCOTT TEST NUMBER 440 TYPE A

TEST DATE : 7/ 1/75

ENGINE 40 NUMBER 5

ENGINE TYPE & MODEL : J79-15
ENGINE SERIAL # : 420966
TOTAL ENGINE TIME : 1800 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : KELLY AFB, TX
TEST CELL NUMBER : 45
TEST CELL OPERATOR :
SCOTT SUPERVISOR :
INSTRUMENT OPERATOR :
SMOKE OPERATOR :

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG. F) : 1820 2035
ATMOSPHERIC PRESS. (IN. HG) : 74.0 76.4
RELATIVE HUMIDITY (%) : 24.20 29.29
INLET AIR HUMIDITY : 56 63
(GM H2O/GM DRY AIR) : 0.0110 0.0123

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG. F
LENGTH : 75 FT.

FUEL ANALYSIS :
SAMPLE # : 7
TYPE : JP-4
WT. % CARBON : 85.81
WT. % HYDROGEN : 14.07
WT. % SULFUR : 0.03
H/C RATIO-ATM. : 1.97
C/H RATIO-MASS : 5.09

TEST MODE	WATER PUMPER	INRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPK	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN W/A
IDLE	05	090	1114			0.04		106.16	246.15	8.81	6.43	2.68	3.75	21.42 0.0231
NORMAL	09	4719	5240			0.05		3.58	37.34	1.59	26.57	24.23	2.34	57.62 0.0231
MILITARY	100	10699	5910			0.11		3.89	25.34	2.35	62.47	56.90	5.57	56.42 0.0231
MAX A3	100	15852	32064			0.30		121.76	2698.87	7.27	71.39	50.28	21.11	24.45 0.0247

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL NOX	F/A ACT	F/A CALC	EPK	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN W/A
IDLE	14.39	58.20	3013	2.50		1.04	1.46	15.98	64.7	3345	2.70	1.16	1.62	0.57
NORMAL	3.26	4.60	3136	5.47		4.90	0.48	1.33	24.3	16310	28.42	25.92	2.50	3.12
MILITARY	0.19	2.10	3141	4.73		7.96	0.78	1.69	19.2	27983	77.83	70.88	6.94	5.34
MAX A3	1.04	71.31	3027	3.10		2.10	0.92	60.56	2344.3	99492	101.86	71.74	30.12	19.70

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

ENGINE T56-A7B

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TORRINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

REPORT DATE 01/22/76
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 45, TYPE H
ENGINE TYPE & MODEL : TS6-A74
ENGINE SERIAL # : AE104293
TOTAL ENGINE TIME : 7594 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : KELLY AFB, TX
TEST CELL NUMBER : 52
TEST CELL OPERATOR : MM
SCOTT SUPERVISOR : ZGT
INSTRUMENT OPERATOR : PQ
SMOKE OPERATOR : DJO

TEST DATE : 7/15/75

ENGINE 5, NUMBER 1

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL. TIME) : START FINISH
1330 1430
INLET AIR TEMP. (DEG. F) : 88.0 92.4
ATMOSPHERIC PRESS. (IN. HG) : 29.33 29.33
RELATIVE HUMIDITY (%) : 41 41
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 8.0092 8.0092

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG. F
LENGTH : 17.5 FT.

FUEL ANALYSIS :
SAMPLE # : A
TYPE : JP-4
WT. % CARBON : 85.39
WT. % HYDROGEN : 14.33
WT. % SULFUR : 0.02
H/C RATIO-ATM. : 2.02
C/H RATIO-MASS : 5.96

TEST MODE	WATER POWER	ESHP HP	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	ELR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE SN	W/A
LO GRND. IDLE	3	183	624			.085		149.25	150.27	1.01	12.23	3.79	5.44	30.75	0.0231
HI GRND. IDLE	8	244	757			.083		8.91	25.41	0.67	14.44	11.99	2.44	31.50	0.0231
APPROACH	18	574	452			.084		4.96	26.47	0.89	17.77	15.09	2.69	36.13	0.0231
CRUISE	72	2259	1518			.089		3.31	24.68	1.76	47.72	42.58	5.14	37.00	0.0231
NORMAL	100	3202	1860			.011		2.11	23.17	2.26	54.08	58.82	5.78	40.13	0.0231
MILITARY	109	3443	1976			.012		2.17	23.62	2.48	59.47	62.06	7.40	39.63	0.0231

EXHAUST MASS EMISSION INVOICES :

	THC	CO	CO2	FUEL NOX	NO	NO2	SOA
LO GRND. IDLE	14.43	32.29	3038	3.85	1.19	2.66	0.25
HI GRND. IDLE	1.51	7.53	3117	7.42	5.83	1.19	0.30
APPROACH	0.63	5.91	3122	6.52	5.53	0.98	0.34
CRUISE	0.21	2.78	3124	8.84	7.84	0.95	0.50
NORMAL	0.11	2.04	3130	9.34	0.51	0.84	0.74
MILITARY	0.10	1.82	3134	9.17	0.19	0.98	0.79

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

REPORT DATE #1/22/76
USAF CONTRACT F29601-75-C-0046

SIT 1492-006-1275

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TOWING ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

ENGINE 5. NUMBER 2
TEST LOCATION : KFLY AFB, TX
TEST CELL NUMBER : 52
TEST CELL OPERATOR : RM
SCOTT SUPERVISOR : ZGT
INSTRUMENT OPERATOR : PW
SMOKE OPERATOR : UJO

TEST DATE : 7/17/75

SCOTT TEST NUMBER 46. TYPE 4
ENGINE TYPE & MODEL : T56-A7H
ENGINE SERIAL # : AE102364
TOTAL ENGINE TIME : 2147 HRS.
PERFORMANCE TEST RESULTS : PASS

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL. TIME) : START
INLET AIR TEMP. (DEG. F) : 905
ATMOSPHERIC PRESS. (IN. HG) : 73.0
RELATIVE HUMIDITY (%) : 77.0
INLET AIR HUMIDITY : 25.33
(GM H2O/GM DRY AIR) : 69
INLET AIR HUMIDITY : 0.0123
(GM H2O/GM DRY AIR) : 0.0128

FUEL ANALYSIS :
SAMPLE # : A
TYPE : JP-4
WT. % CARBON : 85.39
WT. % HYDROGEN : 14.33
WT. % SULFUR : 0.02
H/C RATIO-ATM. : 2.02
C/H RATIO-MASS : 5.96

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 100 DEG. F
LENGTH : 17.0 FT.

TEST MODE	WATER POWER	ESHP HP	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SN	SMOKE W/A
LO GRND. IDLE	3	104	620	740	0.03	0.03		219.89	167.84	1.02	11.98	3.24	8.74	26.75	0.0231
HI GRND. IDLE	4	241	740	854	0.03	0.03		45.42	20.85	4.67	13.32	10.99	2.32	27.38	0.0231
APPROACH	18	592	854	156	0.04	0.04		41.46	30.27	0.89	16.33	14.00	2.33	32.63	0.0231
CRUISE	72	2454	156	194	0.08	0.08		36.85	25.51	1.72	38.29	36.79	1.50	42.65	0.0231
ADMAC	100	3770	194	243	0.11	0.11		23.28	25.73	2.31	57.92	54.90	3.01	39.88	0.0231
MILITARY	100	3684	243	283	0.12	0.12		18.11	23.88	2.47	63.73	60.21	3.52	44.63	0.0231

EXHAUST MASS EMISSION INDICES :

	THC	CO	FUEL	NOX	NO2	THC	CO	CO2	NOX	NO	NO2	SOX
LO GRND. IDLE	23.66	31.54	3019	3.74	2.70	14.67	19.4	1872	2.29	0.62	1.67	0.25
HI GRND. IDLE	7.63	8.52	3890	6.42	1.12	5.00	6.5	2355	4.98	4.03	0.85	0.30
APPROACH	5.28	6.73	3184	5.94	0.45	4.51	5.7	2654	5.09	4.37	0.73	0.34
CRUISE	2.44	2.95	3125	7.24	0.28	3.00	4.6	4858	11.32	10.08	0.44	0.62
ADMAC	1.15	2.21	3127	8.14	0.43	2.18	4.2	5941	15.54	14.73	0.81	0.76
MILITARY	0.84	1.92	3128	8.43	0.47	1.70	3.9	6368	17.16	16.21	0.95	0.91

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SIT 1492-0M6-1275

REPORT DATE 01/22/76
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 47. TYPE H

TEST DATE : 7/18/75

ENGINE 5. NUMBER 3

ENGINE TYPE & MODEL : I56-A7H
ENGINE SERIAL # : AE101491
TOTAL ENGINE TIME : 9755 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : KELLY AFB, TX
TEST CELL NUMBER : 52
TEST CELL OPERATOR : RM
SCOTT SUPERVISOR : ZGT
INSTRUMENT OPERATOR : PR
SMOKE OPERATOR : DJO

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG. F) : 1310 1420
ATMOSPHERIC PRESS. (IN. HG.) : 29.24 29.26
RELATIVE HUMIDITY (%) : 54 31
INLET AIR HUMIDITY :
(GM H2O/GM DRY AIR) : 0.0147 0.0042

FUEL ANALYSIS :
SAMPLE # : R
TYPE : JP-4
WT. % CARBON : 85.39
WT. % HYDROGEN : 14.33
WT. % SULFUR : 0.02
H/C RATIO-ATM. : 2.02
C/H RATIO-MASS : 5.96

FUEL ANALYSIS :

SAMPLE # : R
TYPE : JP-4
WT. % CARBON : 85.39
WT. % HYDROGEN : 14.33
WT. % SULFUR : 0.02
H/C RATIO-ATM. : 2.02
C/H RATIO-MASS : 5.96

TEST MODE	RATED POWER	ESHP HP	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EMW	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SN	W/A
LO GRND. IDLE	3	180	630	1700	0.004	0.004	0.004	143.39	120.41	4.71	9.42	4.33	5.08	17.00	0.0231
H1 GRND. IDLE	8	241	756	2400	0.002	0.002	0.002	20.84	23.27	4.34	10.60	8.80	1.00	22.75	0.0231
APPROACH	18	570	846	3098	0.003	0.003	0.003	18.42	25.12	4.51	13.01	11.10	1.91	26.00	0.0231
CRUISE	72	2210	1400	1400	0.006	0.006	0.006	14.06	37.10	1.32	34.99	33.16	1.03	35.25	0.0231
NORMAL	100	3020	1800	1800	0.008	0.008	0.008	3.37	24.73	1.64	49.43	47.81	2.24	35.00	0.0231
MILITARY	100	3330	1920	1920	0.009	0.009	0.009	4.59	21.47	1.80	55.57	52.76	2.01	34.50	0.0231

EXHAUST MASS EMISSION INDICES :

TEST MODE	THC	CO	CO2	FUEL	NOX	NO	NO2	SOX
LO GRND. IDLE	22.31	12.72	3021	4.20	1.93	2.05	1.43	0.25
H1 GRND. IDLE	6.07	11.04	3098	8.86	7.35	6.70	1.14	0.30
APPROACH	3.40	8.09	3111	6.00	5.87	5.82	0.85	0.34
CRUISE	1.21	5.59	3121	0.21	0.45	12.83	12.16	0.59
NORMAL	0.23	3.00	3120	9.80	9.52	17.72	17.13	0.72
MILITARY	0.30	2.77	3129	10.07	9.56	19.34	18.36	0.77

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SFT 1492-086-1275

REPORT DATE 01/22/76
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 48, TYPE H

TEST DATE : 7/22/75

ENGINE 5, NUMBER 4

ENGINE TYPE & MODEL : T56-A74
ENGINE SERIAL # : AE103319
TOTAL ENGINE TIME : 7135 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : KFLY AFB, TX
TEST CELL NUMBER : 52
TEST CELL OPERATOR : RM
SCOTT SUPERVISOR : ZGT
INSTRUMENT OPERATOR : PR
SMOKE OPERATOR : DJO

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

TEST ENVIRONMENTAL CONDITIONS :

SAMPLE LINE :
FLOW RATE : 27 LPM
TEMPERATURE : 100 DEG.F
LENGTH : 172 FT.

FUEL ANALYSIS :

SAMPLE # : 8
TYPE : JP-4
WT.% CARBON : 95.39
WT.% HYDROGEN : 14.33
WT.% SULFUR : 0.02
H/C RATIO-ATM.: 2.02
C/H RATIO-MASS: 5.96

TEST TIME (MIL-TIME) : START FINISH
INLET AIR TEMP.(DEG.F) : 80.8 92.0
ATMOSPHERIC PRESS.(IN.HG) : 29.28 29.28
RELATIVE HUMIDITY (%) : 38 34
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0085 0.0080

TEST MODE	% RATED POWER	ESHP HP	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE SN	W/A
LO GRNU-IDLE	3	102	575			.005		180.83	175.00	1.09	12.53	3.34	9.19	21.75	0.0230
H1 GRNU-IDLE	8	241	724			.004		12.58	21.40	0.78	15.23	13.02	2.21	27.25	0.0231
APPROACH	18	592	810			.005		10.15	21.30	1.01	13.85	16.74	2.30	29.00	0.0231
CRUISE	72	2214	1470			.009		19.01	21.63	1.79	45.84	42.59	3.25	34.00	0.0231
NORMAL	100	3130	1825			.012		14.06	20.73	2.39	68.08	56.03	4.06	39.75	0.0231
MILITARY	100	3300	1940			.013		6.91	20.33	2.56	54.65	61.44	5.21	44.00	0.0231

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	NOX	FUEL	NO	NO2	SOX
LO GRNU-IDLE	18.30	31.28	3034	3.64	0.97	2.67	1.53	0.23
H1 GRNU-IDLE	1.83	5.97	3119	6.13	5.46	0.93	0.67	0.29
APPROACH	1.14	4.56	3123	6.13	5.39	0.74	4.36	0.32
CRUISE	1.21	2.40	3126	8.35	7.75	0.59	11.40	0.59
NORMAL	0.67	1.73	3120	8.21	7.64	0.55	13.98	0.73
MILITARY	0.31	1.58	3130	8.51	7.95	0.67	15.22	0.78

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SFT 1492-005-1275

REPORT DATE 01/22/76
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 44, TYPE C

TEST DATE : 7/22/75

ENGINE 5, NUMBER 4

ENGINE TYPE & MODEL : T56-A74
ENGINE SERIAL # : A103319
TOTAL ENGINE TIME : 7115 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : KELLY AFB, TX
TEST CELL NUMBER : 52
TEST CELL OPERATOR : RM
SCOTT SUPERVISOR : ZGT
INSTRUMENT OPERATOR : PR
SMOKE OPERATOR : DJO

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG. F) : 1010 1150
ATMOSPHERIC PRESS. (IN. HG) : 29.28 29.28
RELATIVE HUMIDITY (%) : 38 34
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 8.0085 8.0020

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 100 DEG. F
LENGTH : 17.4 FT.

FUEL ANALYSIS :
SAMPLE # : 8
TYPE : JP-4
WT. % CARBON : 85.39
WT. % HYDROGEN : 14.33
WT. % SULFUR : 0.02
H/C RATIO-ATM. : 2.02
C/H RATIO-MASS : 5.96

TEST MODE	RATED POWER	ESHP HP	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EXR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SN	SMOKE
LO GRND. IDLE	3	100	575			.005		194.57	177.46	1.08	11.94	2.62	9.32	28.25	0.0264
HI GRND. IDLE	8	241	720			.004		11.14	23.53	4.78	15.31	12.94	2.37	26.00	0.0264
NORMAL	100	3130	1825			.016		18.91	27.38	3.15	76.36	70.64	5.72	43.50	0.0264
MILITARY	100	3300	1940			.017		11.01	26.41	3.45	96.09	78.09	8.01	45.25	0.0264

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL NOX	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SOX
LO GRND. IDLE	18.08	31.70	3032	3.51	0.77	2.74	10.86	14.2	1743	2.02	0.44	1.57	0.23
HI GRND. IDLE	1.62	5.97	3119	6.34	5.39	0.00	1.17	4.3	2246	4.59	3.88	0.71	0.29
NORMAL	0.68	1.73	3129	7.92	7.32	0.59	1.25	3.2	5710	14.46	13.38	1.48	0.73
MILITARY	0.36	1.55	3130	8.15	7.40	0.76	0.71	3.0	6072	15.02	14.35	1.47	0.78

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TUGGINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-006-1275

REPORT DATE 01/22/74
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 5A TYPE A

ENGINE 5, NUMBER 5

ENGINE TYPE & MODEL : 156-A7H
ENGINE SERIAL # : AE103503
TOTAL ENGINE TIME : 7029 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : KELLY AFB, TX
TEST CELL NUMBER : 52
TEST CELL OPERATOR : RM
SCOTT SUPERVISOR : ZGT
INSTRUMENT OPERATOR : PH
SMOKE OPERATOR : DJO

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL. TIME) : START 1205 FINISH 1420
INLET AIR TEMP. (DEG. F) : 87.0 RA. 0
ATMOSPHERIC PRESS. (IN. HG) : 29.23 29.21
RELATIVE HUMIDITY (%) : 48 44
INLET AIR HUMIDITY -
(GM H₂O/GM DRY AIR) : 8.2136 8.2134

SAMPLE LINE : 23 LPM
FLOW RATE : 100 DEG. F
TEMPERATURE : 100 DEG. F
LENGTH : 100 FT.

FUEL ANALYSIS :

SAMPLE # : A
TYPE : JP-4
WT. % CARBON : 85.39
WT. % HYDROGEN : 14.33
WT. % SULFUR : 0.02
H/C RATIO-ATM. : 2.02
C/H RATIO-MASS : 5.96

TEST MODE	RATED POWER	ESHP HP	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EDR	THC PPM	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE -- SN	W/A
LO GRND. IDLE	3	143	585			0.85		154.27	167.72	1.86	11.59	4.21	7.38	23.59	0.023
HI GRND. IDLE	3	241	720			0.83		14.75	25.44	4.56	13.61	11.94	1.63	30.88	0.023
NORMAL	100	2873	1785			0.11		18.90	28.12	2.27	62.40	57.91	4.49	36.42	0.023
MILITARY	109	3209	1895			0.12		7.26	26.39	2.45	68.80	62.85	5.95	37.25	0.023

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	NOX	FUEL	THC	CO	CO2	NOX	# / HR	NO	NO2	SOX
LO GRND. IDLE	17.21	30.69	3038	3.48	1.26	18.87	18.4	1777	2.84	0.74	4.23	1.30	0.23
HI GRND. IDLE	1.50	7.71	3117	4.64	5.40	1.88	5.5	2244	4.81	4.23	14.88	0.58	0.29
NORMAL	0.55	2.48	3128	8.94	4.34	0.98	4.4	5583	16.83	5583	16.88	1.15	0.71
MILITARY	0.34	2.15	3129	9.19	4.39	0.64	4.1	5929	17.41	5929	15.91	1.51	0.76

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SFT 1492-1086-1275

REPORT DATE 01/22/76
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 51. TYPE R

TEST DATE : 01/4/75

ENGINE 5. NUMBER 6

ENGINE TYPE & MODEL : T56-A7M
ENGINE SERIAL # : AE104060
TOTAL ENGINE TIME : 9345 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : KELLY AFB, TX
TEST CELL NUMBER : 52
TEST CELL OPERATOR : RM
SCOTT SUPERVISOR : ZGT
INSTRUMENT OPERATOR : FL
SMOKE OPERATOR : DJO

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG. F) : 1325 1445
ATMOSPHERIC PRESS. (IN. HG) : 29.8 29.19
RELATIVE HUMIDITY (%) : 58 61
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0176 0.0179

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG. F
LENGTH : 1.2 FT.

FUEL ANALYSIS :

SAMPLE # : A
TYPE : JP-4
WT. % CARBON : 85.39
WT. % HYDROGEN : 14.33
WT. % SULFUR : 0.02
H/C RATIO-ATM. : 2.02
C/H RATIO-MASS : 5.96

TEST MODE	RATED POWER %	ESHP HP	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EMP	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE SN	W/A
LO GRND. IDLE	3	103	585	585		.075		164.40	162.45	1.00	11.18	5.13	6.06	13.75	0.0231
HI GRND. IDLE	8	285	720	720		.083		39.97	28.29	4.63	13.16			21.00	0.0231
APPROACH	19	592	818	818		.084		49.91	28.67	0.86	17.58	16.55	1.03	26.00	0.0231
CRUISE	72	2325	1495	1495		.084		58.90	25.52	1.57	45.18	38.91	6.27	32.75	0.0231
NORMAL	100	3244	1865	1865		.011		71.58	24.96	2.15	64.72	55.74	8.98	31.50	0.0231
MILITARY	100	3487	1965	1965		.011		88.65	25.14	2.32	69.90	55.69	13.21	32.33	0.0231

EXHAUST MASS EMISSION INOICES :

	THC	CO	CO2	FUEL NOX	F/A	W	NO2	NOX	NO	NO2	SOX
LO GRND. IDLE	18.22	31.45	3034	3.56	1.63	1.93		2.08	0.95	1.13	0.23
HI GRND. IDLE	7.09	8.79	3100	6.72				4.84			0.29
APPROACH	6.25	6.57	3105	6.62	0.23	0.39		5.36	5.05	0.31	0.32
CRUISE	4.97	3.21	3115	9.34	0.04	1.30		13.96	12.03	1.94	0.50
NORMAL	3.74	2.30	3119	9.42	0.45	1.36		18.31	15.77	2.54	0.75
MILITARY	4.34	2.15	3118	9.67	7.82	1.85		19.00	15.36	3.64	0.79

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

REPORT DATE 01/22/76
USAF CONTRACT F29601-75-C-0046

SET 1492-086-1275

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SCOTT TEST NUMBER 52. TYPE A
ENGINE TYPE & MODEL : T56-174
ENGINE SERIAL # : AE1R5484
TOTAL ENGINE TIME : 5411 HRS.
PERFORMANCE TEST RESULTS : PASS
AIR FLOW MEASUREMENT METHOD : NOT MEASURED
TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL. TIME) : START 0100
INLET AIR TEMP. (DEG.F) : 87.0
ATMOSPHERIC PRESS. (IN. HG) : 29.25
RELATIVE HUMIDITY (%) : 26
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0100

FUEL ANALYSIS :
SAMPLE # : 8
TYPE : JP-4
WT. % CARBON : 95.39
WT. % HYDROGEN : 14.33
WT. % SULFUR : 0.02
H/C RATIO-ATM. : 2.02
C/H RATIO-MASS : 5.94
SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 100 DEG.F
LENGTH : 100 FT.

TEST MODE	RATED POWER	ESHP HP	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EDP	THC DPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SN	SMOKE
LO GRND. IDLE	3	183	570			.005		231.17	180.68	1.09	9.37	4.61	4.76	23.25	0.0231
HI GRND. IDLE	8	241	695			.003		64.82	20.51	4.67	13.91			30.09	0.0231
NORMAL	100	3311	1900			.013		119.99	32.82	2.53	74.45			36.08	0.0231
MILITARY	100	3594	2010			.014		143.13	30.70	2.74	90.60			35.58	0.0231

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL	NOX	NO	NO2	SOX
LO GRND. IDLE	23.34	13.26	3017	2.71	1.38	1.55	0.79	0.23
HI GRND. IDLE	14.70	8.42	3090	6.67		4.64		0.28
NORMAL	5.37	2.57	3114	9.55		18.17		0.76
MILITARY	4.27	2.25	3118	9.57		19.24		0.50

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SPT 1492-006-1275

REPORT DATE 01/22/76
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 53. TYPE 4

TEST DATE : 01/6/75

ENGINE 5. NUMBER 7

ENGINE TYPE & MODEL : T55-A7H
ENGINE SERIAL # : AET05494
TOTAL ENGINE TIME : 5411 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : KELLY AFB, TX
TEST CELL NUMBER : 52
TEST CELL OPERATOR : RM
SCOTT SUPERVISOR : ZGT
INSTRUMENT OPERATOR : FL
SMOKE OPERATOR : DJO

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL. TIME) : START FINISH
1220 1250
INLET AIR TEMP. (DEG.F) : 85.0 89.0
ATMOSPHERIC PRESS. (IN.HG) : 29.27 29.25
RELATIVE HUMIDITY (%) : 53 24
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0141 0.0077

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 OFG.F.
LENGTH : 100 FT.

FUEL ANALYSIS :
SAMPLE # : A
TYPE : JP-4
WT.% CARBON : 85.39
WT.% HYDROGEN : 14.33
WT.% SULFUR : 0.02
H/C RATIO-ATM.: 2.02
C/H RATIO-MASS: 5.96

TEST MODE	WATER POWER	% ESHP HP	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EXR	THC PPHC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SN W/A	SMOKE ---
LO GRND. IDLE	3	103	570			0.085		244.93	170.47	1.06	15.08	3.86	11.22	18.25	0.0230
HI GRND. IDLE	8	241	695			0.084		77.84	26.01	0.75	17.72	14.27	3.45	27.50	0.0230
APPROACH	18	592	800			0.085		79.70	29.21	1.06	22.90	19.04	3.92	30.75	0.0230
CRUISE	72	2344	1510			0.084		95.77	26.56	1.90	56.14	51.20	4.94	33.00	0.0230
NORMAL	100	3224	1865			0.013		110.37	27.25	2.67	91.08	76.53	4.55	28.50	0.0231
MILITARY	100	3531	1990			0.014		112.38	26.91	2.83	96.23	82.08	4.15	28.25	0.0231

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL NOX	NO	NO2	THC #/HR	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SOX
LO GRND. IDLE	25.31	32.20	3013	4.47	1.14	3.33	14.43	10.4	1717	2.55	0.65	1.90	0.23
HI GRND. IDLE	11.65	6.04	3091	7.61	0.13	1.08	0.10	4.7	2140	5.29	4.26	1.83	0.26
APPROACH	4.40	5.24	3102	7.01	5.81	1.20	6.70	4.2	2401	5.61	4.65	0.96	0.32
CRUISE	5.71	2.77	3113	9.60	8.76	0.05	8.62	4.2	4701	14.50	13.23	1.20	0.50
NORMAL	4.70	2.03	3117	9.91	9.35	0.56	8.77	3.0	5814	18.47	17.44	1.04	0.75
MILITARY	4.52	1.09	3110	9.94	9.46	0.44	0.00	3.0	6205	19.70	10.03	0.95	0.80

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

REPORT DATE 01/22/76
USAF CONTRACT F29601-75-C-0046

SFT 1492-DM6-1275

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

ENGINE 5. NUMBER 8

TEST DATE : 8/ 8/75

SCOTT TEST NUMBER 54. TYPE H

TEST LOCATION : KELLY AFB, TX
TEST CELL NUMBER : 52
TEST CELL OPERATOR : RM
SCOTT SUPERVISOR : ZGT
INSTRUMENT OPERATOR : FL
SMOKE OPERATOR : JJO

ENGINE TYPE & MODEL : F4U-17H
ENGINE SERIAL # : A211715
TOTAL ENGINE TIME : 10951 HRS.
PERFORMANCE TEST RESULTS : PASS

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

FUEL ANALYSIS :

SAMPLE # : 8
TYPE : JP-4
WT. % CARBON : 85.39
WT. % HYDROGEN : 14.33
WT. % SULFUR : 0.02
H/C RATIO-ATM. : 2.02
C/H RATIO-MASS : 5.96

SAMPLE LINE : 23 LPM
FLOW RATE : 300 DEG.F
TEMPERATURE : 174 FT.

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG.F) : 825 935
ATMOSPHERIC PRESS. (IN. HG) : 70.0 74.0
RELATIVE HUMIDITY (%) : 29.32 25.34
INLET AIR HUMIDITY : 100 91
(GM H2O/GM DRY AIR) : 0.0161 0.0147

TEST MODE	RATED POWER	ESHP HP	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPH	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SN	W/A
LO GRND. IDLE	3	103	598			0.06		256.02	184.73	1.16	14.31	1.05	13.26	34.00	0.0230
HI GRND. IDLE	8	241	715			0.04		180.42	29.53	4.83	16.83	11.78	5.05	33.75	0.0231
APPROACH	18	592	820			0.06		83.04	31.74	1.15	21.78	15.69	6.01	32.00	0.0231
CRUISE	72	2325	1505			0.11		126.84	31.03	2.25	56.30	45.25	11.05	36.00	0.0231
NORMAL	100	3260	1805			0.14		129.54	27.94	2.74	71.87	59.11	12.76	38.25	0.0231
MILITARY	109	3553	1975			0.14		135.25	28.15	2.93	78.98	62.96	16.02	40.25	0.0230

EXHAUST MASS EMISSION INDICES :

	THC	CO	# / LBS. FUEL	CO2	NO	NO2	# / HR	CO2	NOX	NO	NO2	SOX
LO GRND. IDLE	25.18	30.47	3019	3.00	0.24	3.59	14.03	17.7	2.25	0.17	2.08	0.23
HI GRND. IDLE	13.64	7.01	3005	6.56	4.59	1.97	9.76	5.0	4.59	3.28	1.41	0.29
APPROACH	4.13	5.43	3102	6.00	4.41	1.69	6.67	4.5	5.00	3.61	1.38	0.33
CRUISE	6.40	2.73	3111	8.15	6.50	1.50	9.63	4.1	12.26	9.86	2.41	0.60
NORMAL	5.37	2.02	3115	8.57	7.03	1.52	9.97	3.8	15.86	13.05	2.82	0.74
MILITARY	5.24	1.90	3116	8.77	6.90	1.78	10.34	3.8	17.33	13.01	3.52	0.79

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

ENGINE TF39

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

S-T 1492-086-1275

REPORT DATE 01/22/76
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 550 TYPE A

TEST DATE : 4/24/75

ENGINE 60 NUMBER 1

ENGINE TYPE & MODEL : TF39

TEST LOCATION : KELLY AFB, TX

ENGINE SERIAL # : 44112R

TEST CELL NUMBER : 60

TOTAL ENGINE TIME : 0 HRS.

TEST CELL OPERATOR : P

PERFORMANCE TEST RESULTS : PASS

SCOTT SUPERVISOR : MHS

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

INSTRUMENT OPERATOR : FL
SMOKE OPERATOR : DJO

TEST ENVIRONMENTAL CONDITIONS :

FUEL ANALYSIS :

TEST TIME (MIL. TIME) : START
1148
FINISH
1439
INLET AIR TEMP. (DEG.F) : 42.8
ATMOSPHERIC PRESS. (IN. HG) : 29.32
RELATIVE HUMIDITY (%) : 72
INLET AIR HUMIDITY -
(GM H2O/100 GM DRY AIR) : 0.0174

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG.F
LENGTH : 120 FT.

SAMPLE # : 9
TYPE : JP-4
WT. % CARBON : 85.69
WT. % HYDROGEN : 14.42
WT. % SULFUR : 0.05
H/C RATIO-ATM. : 2.02
C/H RATIO-MASS : 5.94

TEST MODE	% POWER	THROST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPH	THC PPM	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SMOKE SN	W/A
IDLE	6	2250	1131			.089		357.72	628.87	1.88	13.96	0.55	13.41	1.93	0.0231
INTERMED. I	75	27450	4914			.018		2.51	15.71	3.64	191.22	167.98	23.24	7.93	0.0238
NORMAL	97	34425	12228			.021		2.97	17.19	4.21	333.67	286.13	47.54	7.36	0.0238
MILITARY	100	34214	12725			.021		2.62	17.31	4.29	362.44	308.73	61.71	5.14	0.0238

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL NOX	CO	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SOX
IDLE	21.52	5.21	2972	2.41	0.04	2.31		24.33	73.4	3161	2.72	0.11	2.62	1.13
INTERMED. I	4.08	0.85	3132	17.07	14.95	2.87		0.69	7.6	27983	151.64	133.21	18.43	8.98
NORMAL	8.08	0.81	3132	25.94	20.26	3.78		0.90	9.9	38270	317.26	272.06	45.28	12.21
MILITARY	6.87	0.81	3132	27.60	20.97	4.71		0.80	14.2	39852	352.34	292.35	59.00	12.71

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SAT 1492-006-1275

REPORT DATE 01/22/76
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 5A TYPE A

TEST DATE : 9/17/75

ENGINE 6, NUMBER 2

ENGINE TYPE & MODEL : TF39
ENGINE SERIAL # : 44147
TOTAL ENGINE TIME : 0 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : KELLY AFB, TX
TEST CELL NUMBER : 6B
TEST CELL OPERATOR : P
SCOTT SUPERVISOR : MHS
INSTRUMENT OPERATOR : FL
SMOKE OPERATOR : DJO

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

TEST ENVIRONMENTAL CONDITIONS :

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 34.8 DEG.F
LENGTH : 12M FT.

FUEL ANALYSIS :
SAMPLE # : 1B
TYPE : JP-4
WT.% CARBON : 85.96
WT.% HYDROGEN : 14.23
WT.% SULFUR : 0.84
H/C RATIO-ATM% : 1.99
C/H RATIO-MASS : 6.03

TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG.F) : 142.0 24.21
ATMOSPHERIC PRESS. (IN. HG) : 91.0 35.0
RELATIVE HUMIDITY (%) : 29.86 25.46
INLET AIR HUMIDITY : 7.4 7.4
(GM H2O/GM DRY AIR) : 4.9228 4.8225

TEST MODE	RATED POWER %	INRST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPM	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SN	W/A	SMOKE
IDLE	6	214	1402			.089		362.34	429.53	1.75	14.95	8.62	14.33	8.77	8.8231	
INTERMED. 1	75	2692	8798		.017	.017		18.31	12.47	3.52	221.14	189.78	31.36	5.95	8.8231	
NORMAL	97	3395	11348		.020	.020		15.52	13.32	4.15	323.26	298.72	32.53	3.93	8.8231	
MILITARY	100	3725	12515		.023	.023		13.59	15.31	4.59	379.67	356.25	33.43	4.85	8.8231	
TAKE-OFF	104	3855	10432		.024	.024		4.56	16.48	4.81	398.88	355.41	34.67	4.14	8.8231	

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	# / 100# FUEL	NOX	NO	NO2	SOX
IDLE	22.43	47.95	2972	2.65	0.11	0.12	2.79	0.89
INTERMED. 1	8.34	0.73	3138	25.61	17.68	155.44	25.68	7.03
NORMAL	8.43	0.64	3138	25.57	22.00	268.74	29.18	9.06
MILITARY	8.34	0.57	3138	27.14	25.49	339.93	28.98	10.48
TAKE-OFF	8.11	0.64	3139	25.64	24.24	277.52	24.67	4.34

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-086-1275

REPORT DATE 01/22/76
USAF CONTRACT F29601-75-C-0046

SCOTT TEST #1444R 57. TYPE A

TEST DATE : 14/ 1/75

ENGINE #. NUMBER 3

ENGINE TYPE & MODEL : TF39

TEST LOCATION : KELLY AFB, TX

ENGINE SERIAL # : 441169

TEST CELL NUMBER : 60

TOTAL ENGINE TIME : 8 HRS.

TEST CELL OPERATOR : P

PERFORMANCE TEST RESULTS : PASS

SCOTT SUPERVISOR : FL

AIR FLOW MEASUREMENT METHOD : NOT MEASURED

INSTRUMENT OPERATOR : DJO

SMOKE OPERATOR :

TEST ENVIRONMENTAL CONDITIONS :

FUEL ANALYSIS :

TEST TIME (MIL. TIME) : START FINISH

INLET AIR TEMP. (DEG.F) : 80.0 73.0

ATMOSPHERIC PRESS. (IN. HG) : 29.32 29.01

RELATIVE HUMIDITY (%) : 68 70

INLET AIR HUMIDITY -

(GM H2O/GM DRY AIR) : 8.0153 8.0136

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 100 DEG.F
LENGTH : 120 FT.

SAMPLE # : 11

TYPE : JP-4

WT.% CARBON : 85.83

WT.% HYDROGEN : 14.27

WT.% SULFUR : 8.03

H/C RATIO-ATM.: 2.00

C/H RATIO-MASS: 6.01

TEST MODE	RATED POWER %	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SNOKE
10LF	6	2224	1126			.010		150.68	630.70	1.97	22.62	1.22	21.40	
INTERMED. 1	75	28560	3030			.018		9.74	14.93	3.56	230.16	203.71	34.44	
NORMAL	97	37450	12370			.021		4.70	14.14	4.23	406.50	351.50	54.92	
MILITARY	100	39150	12835			.021		3.56	14.31	4.23	395.57	371.46	24.11	

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	# / 1000# FUEL	F/A	F/A ACT	EPR	THC	CO	CO2	# / HR	NO	NO2	SNOKE
10LF	19.40	60.94	2989	3.59	.010			21.85	68.4	3.65	4.04	0.22	3.82	0.57
INTERMED. 1	4.31	0.84	3136	21.90	14.74			2.82	7.6	28314	197.79	169.18	28.61	5.41
NORMAL	0.13	0.67	3136	31.44	27.24			1.57	4.3	38797	389.58	336.95	52.63	7.42
MILITARY	0.10	0.68	3136	30.64	26.82			1.24	4.7	43256	393.96	369.95	24.01	7.69

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

S-T 1492-086-1275

REPORT DATE 11/22/76
USAF CONTRACT F29601-75-C-0846

SCOTT TEST NUMBER 58, TYPE A

TEST DATE : 14/ 3/75

ENGINE 6, NUMBER 4

ENGINE TYPE & MODEL : TF34
ENGINE SERIAL # : 441142
TOTAL ENGINE TIME : 8 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : KELLY AFH, TX
TEST CELL NUMBER : 60
TEST CELL OPERATOR : JF
SCOTT SUPERVISOR : FL
INSTRUMENT OPERATOR : DJO
SMOKE OPERATOR :

AIR FLOW MEASUREMENT METHOD : NJI MEASURED

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG. F) : 64.9 64.8
ATMOSPHERIC PRESS. (IN. HG) : 29.57 29.57
RELATIVE HUMIDITY (%) : 84 74
INLET AIR HUMIDITY -
(GM H2O/6M DRY AIR) : 6.8189 6.8117

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 340 DEG. F
LENGTH : 124 FT.

FUEL ANALYSIS :

SAMPLE # : 12
TYPE : JP-4
WT. % CARBON : 85.63
WT. % HYDROGEN : 14.45
WT. % SULFUR : 0.04
H/C RATIO-ATM. : 2.03
C/H RATIO-MASS : 5.93

TEST MODE	* WATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EM	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	*--- SMOKE --- SN W/A
IDLE	6	2237	1178			.018		524.91	744.42	1.97	28.09	1.32	18.77	
INTERMED. 1	75	24632	8985			.018		18.84	13.97	3.58	258.65	227.86	22.84	
NORMAL	97	34895	12174			.028		7.86	12.54	4.13	384.66	358.48	26.26	
MILITARY	188	30835	12675			.021		8.39	12.87	4.21	357.36	362.35	5.82	
TAKE-OFF	184	48194	13885			.022		18.10	11.78	4.46	415.39	482.55	12.85	

EXHAUST MASS EMISSION INDICES :

	THC	CO	# / 1000# FUEL	NO	NO2	SOX
IDLE	24.56	72.83	2934	0.21	3.69	0.74
INTERMED. 1	8.32	4.78	3129	28.88	283.74	18.53
NORMAL	8.22	8.61	3129	28.36	378.40	25.29
MILITARY	8.23	8.57	3129	28.15	366.66	4.94
TAKE-OFF	8.26	8.52	3129	29.55	488.19	12.62

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

ENGINE J75-P17

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SCOTT TEST NUMBER 68. TYPE M

ENGINE TYPE & MODEL : J75-144

ENGINE SERIAL # : 612330

TOTAL ENGINE TIME : 8 HRS.

PERFORMANCE TEST RESULTS : PASS

AIR FLOW MEASUREMENT METHOD : BELLMOUTH

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL-TIME) : START FINISH

INLET AIR TEMP. (DEG.F) : 14.1 14.5

ATMOSPHERIC PRESS. (IN.HG) : 30.8 34.8

RELATIVE HUMIDITY (%) : 28.66 29.49

INLET AIR HUMIDITY - 69

(GM H2O/GM DRY AIR) : 0.0028 0.0029

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EDR	THC PPHC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SN	W/A
10LE	6	924	1574	381857	.025	.025	1.457	484.96	330.97	0.94	7.73	1.15	6.58	11.00	0.0230
INTERMED. 1	69	11124	7851	568419	.012	.011	2.081	9.17	39.86	2.16	42.86	31.61	11.25	46.58	0.0230
INTERMED. 2	104	15149	12008	783581	.015	.014	2.568	6.88	23.62	2.83	79.33	67.92	11.41	50.00	0.0230
MILITARY	189	17616	13575	888251	.017	.015	2.751	10.35	19.94	3.84	101.86	92.13	9.73		

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL	NOX	NO2
10LE	54.21	66.16	2883	2.48	0.37	2.11
INTERMED. 1	0.48	3.54	3129	6.44	4.79	1.77
INTERMED. 2	0.28	1.66	3132	9.14	7.86	1.32
MILITARY	0.38	1.29	3132	10.83	9.80	1.03

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SFT 1492-DNR-0876

REPORT DATE 08/19/76
USAF CONTRACT F29601-75-C-0046

TEST DATE : 2/ 4/76

ENGINE 8. NUMBER 1

TEST LOCATION : TINKER AFB

TEST CELL NUMBER : 9

TEST CELL OPERATOR : C

SCOTT SUPERVISOR : ZT

INSTRUMENT OPERATOR : PR

SMOKE OPERATOR : DO

FUEL ANALYSIS :

SAMPLE # : 13

TYPE : JP-4

WT.% CARBON : 85.83

WT.% HYDROGEN : 14.40

WT.% SULFUR : 0.08

H/C RATIO-ATM.: 2.01

C/H RATIO-MASS: 5.96

REPORT DATE 08/19/76
USAF CONTRACT F29691-75-C-0046

SFT 1492-004-0876

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF : JETLINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

ENGINE A. NUMBER 2

TEST DATE : 2/ 4/76

TEST LOCATION : TINKER AFB
TEST CELL NUMBER : 9
TEST CELL OPERATOR : B
SCOTT SUPERVISOR : ZT
INSTRUMENT OPERATOR : PR
SMOKE OPERATOR : 00

FUEL ANALYSIS :
SAMPLE # : 13
TYPE : JP-4
WT.% CARBON : 85.83
WT.% HYDROGEN : 14.40
WT.% SULFUR : 0.08
H/C RATIO-ATM. : 2.01
C/H RATIO-MASS : 5.96

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG.F
LENGTH : 100 FT.

TEST ENVIRONMENTAL CONDITIONS :
START FINISH
TEST TIME (MIN.TIME) : 2220 2254
INLET AIR TEMP.(DEG.F) : 30.0 29.0
ATMOSPHERIC PRESS.(IN.HG) : 29.77 29.79
RELATIVE HUMIDITY (%) : 63 63
INLET AIR HUMIDITY :
(GM H2O/GM DRY AIR) : 0.0023 0.0022

TEST MODE	WATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPM	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SN	SMOKE
IDLE	5	870	1520	295411	.005	.005	1.061	261.74	314.51	0.87	7.34	1.44	5.90	11.00	0.0231
INTERMED. 1	77	12427	3697	701781	.012	.011	2.074	7.66	37.25	2.31	49.12	37.02	12.10	45.00	0.0231
INTERMED. 2	99	15029	11748	778690	.015	.014	2.595	5.65	25.86	2.79	77.71	63.01	14.70	51.00	0.0231
MILITARY	110	17002	13490	804009	.017	.015	2.769	4.12	27.12	3.47	97.93	86.20	11.13	50.00	0.0231

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	NOX	NO	NO2	SOX
IDLE	32.24	67.60	2401	2.59	0.51	2.08	3.94
INTERMED. 1	0.30	3.21	3129	6.96	5.24	1.71	45.60
INTERMED. 2	0.23	1.85	3132	9.12	7.39	1.73	14.90
MILITARY	0.15	1.44	3133	10.45	9.26	1.19	20.18
							16.02
							21.55

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

REPORT DATE 08/19/76
USAF CONTRACT F29601-75-C-0046

SET 1492-D44-0876

SCOTT TEST NUMBER 620 TYPE R

ENGINE R. NUMBER 3

ENGINE TYPE & MODEL : J75-190

TEST LOCATION : TINKER AFH

ENGINE SERIAL # : 612479

TEST CELL NUMBER : 9

TOTAL ENGINE TIME : 4 HRS.

TEST CELL OPERATOR : B

PERFORMANCE TEST RESULTS : FAIL

SCOTT SUPERVISOR : ZT

AIR FLOW MEASUREMENT METHOD : WELLMOUTH

INSTRUMENT OPERATOR : PM

TEST ENVIRONMENTAL CONDITIONS :

FUEL ANALYSIS :

TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG. F) : 1429 1511
ATMOSPHERIC PRESS. (IN. HG) : 29.12 29.12
RELATIVE HUMIDITY (%) : 57 65
INLET AIR HUMIDITY :
(GM H2O/GM DRY AIR) : 8.3015 8.0015

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG. F
LENGTH : 100 FT.

SAMPLE # : 13
TYPE : JP-4
WT. % CARBON : 85.83
WT. % HYDROGEN : 14.40
WT. % SULFUR : 0.08
H/C RATIO-ATM. : 2.01
C/H RATIO-MASS : 5.96

TEST MODE
IDLE
INTERMED. 1
INTERMED. 2
MILITARY

RATED POWER #
1007
12473
14843
17757

THRUST #
1007
12473
14843
17757

FUEL FLOW #/HR
1557
9385
12497
13747

AIR FLOW #/HR
319502
718369
788281
820537

F/A ACT
0.45
0.13
0.15
0.17

F/A CALC
0.45
0.12
0.14
0.15

EDR
1.71
2.274
2.598
2.771

THC
232.75
14.54
14.32
9.77

CO
257.83
36.97
29.87
26.05

CO2
8.90
2.38
2.74
3.48

NOX
7.58
49.92
72.47
45.55

NO
1.49
40.89
54.56
90.18

NO2
6.01
9.83
13.31
5.37

SOX
18.00
49.50
52.00
53.00

W/A
0.0230
0.0231
0.0231
0.0230

EXHAUST MASS EMISSION INOICES :

THC CO NOX
24.03 54.05 2974 2.59 0.51 2.08
0.70 3.00 3129 6.86 5.51 1.35
0.42 2.00 3131 8.45 6.99 1.56
0.36 1.69 3132 10.16 9.59 0.57

THC CO NOX
40.44 89.6 4927 4.29 3.44 2.55
5.54 29.0 29363 64.39 12.68 15.00
5.11 25.1 37877 103.42 18.89 19.34
4.94 23.2 43054 139.53 7.85 21.97

THC CO NOX
232.75 257.83 8.90 7.58 1.49 6.01
14.54 36.97 2.38 49.92 40.89 9.83
14.32 29.87 2.74 72.47 54.56 13.31
9.77 26.05 3.48 45.55 90.18 5.37

THC CO NOX
232.75 257.83 8.90 7.58 1.49 6.01
14.54 36.97 2.38 49.92 40.89 9.83
14.32 29.87 2.74 72.47 54.56 13.31
9.77 26.05 3.48 45.55 90.18 5.37

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AVERAGED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SFT 1492-DUR-8876

REPORT DATE 08/19/76
USAF CONTRACT F29681-75-C-0046

SCOTT TEST NUMBER 65. TYPE H

TEST DATE : 2/11/76

ENGINE 9. NUMBER 1

ENGINE TYPE & MODEL : J75-217

TEST LOCATION : TINKER AFB

ENGINE SERIAL # : 410928

TEST CELL NUMBER : 9

TOTAL ENGINE TIME : 0 HRS.

SCOTT SUPERVISOR : ZT

PERFORMANCE TEST RESULTS : PASS

INSTRUMENT OPERATOR : PR

AIR FLOW MEASUREMENT METHOD : HELLMOUTH

SMOKE OPERATOR : DO

TEST ENVIRONMENTAL CONDITIONS :

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG.F
LENGTH : 100 FT.

FUEL ANALYSIS :

SAMPLE # : 13
TYPE : JP-4
WT.% CARBON : 85.83
WT.% HYDROGEN : 14.40
WT.% SULFUR : 0.08
H/C RATIO-ATM. : 2.01
C/H RATIO-MASS : 5.96

START FINISH
TEST TIME (MIN.TIME) : 1208 1416
INLET AIR TEMP.(DEG.F) : 53.8 58.0
ATMOSPHERIC PRESS.(IN.HG) : 29.33 29.87
RELATIVE HUMIDITY (%) : 33 26
INLET AIR HUMIDITY -
104 H2O/GM DRY AIR) : 0.0324 0.0427

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SNOKE ---
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
IDLE	6	958	1571	236533	.007	.006	1.094	767.09	540.43	1.16	8.98	1.61	7.37	13.50
INTERMED. 1	48	14950	7967	645689	.012	.011	2.009	9.02	32.86	2.25	51.10	37.36	13.74	48.10
INTERMED. 2	48	14953	12314	716995	.014	.013	2.374	3.43	24.33	2.63	74.48	56.05	19.43	47.00
MILITARY	100	14931	12388	764773	.016	.015	2.517	3.71	21.06	2.95	98.79	83.42	15.28	49.00
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EXHAUST MASS EMISSION INDICES :

---	THC	CO	CO2	NOX	FUEL	---	THC	CO	CO2	NOX	---	---	---	---
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
IDLE	65.94	42.27	2823	2.25	0.44	1.84	105.17	129.3	4434	3.53	0.63	2.90	2.51	2.51
INTERMED. 1	0.46	2.91	3134	7.43	5.43	2.38	3.64	23.2	26974	59.20	43.28	15.92	12.74	12.74
INTERMED. 2	0.17	1.04	3132	4.22	5.98	2.24	1.71	19.0	32305	95.13	71.98	23.15	16.49	16.49
MILITARY	0.14	1.42	3133	10.96	4.26	1.70	1.78	17.6	38810	135.75	114.73	21.02	19.80	19.80

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SFT 1492-008-00376

REPORT DATE 08/19/76
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 66. TYPE C

TEST DATE : 2/11/76

ENGINE 9. NUMBER 1

ENGINE TYPE & MODEL : J75-P17
ENGINE SERIAL # : 610924
TOTAL ENGINE TIME : 8 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : TINKER AFB
TEST CELL NUMBER : 9
TEST CELL OPERATOR : C
SCOTT SUPERVISOR : ZT
INSTRUMENT OPERATOR : PR
SMOKE OPERATOR : 00

AIR FLOW MEASUREMENT METHOD : BELLMOUTH

TEST ENVIRONMENTAL CONDITIONS :

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 30.0 DEG.F
LENGTH : 100 FT.

FUEL ANALYSIS :
SAMPLE # : 13
TYPE : JP-4
WT.% CARBON : 85.83
WT.% HYDROGEN : 14.40
WT.% SULFUR : 0.09
H/C RATIO-ATM.: 2.01
C/H RATIO-MASS: 5.96

TEST TIME (MIL.TIME) : START FINISH
INLET AIR TEMP. (DEG.F) : 124.8 141.6
ATMOSPHERIC PRESS. (IN.HG) : 53.0 58.0
RELATIVE HUMIDITY (%) : 28.93 23.47
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0224 0.0227

TEST MODE	RATED POWER	% THROUST	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	CO	THC	CO	CO2	NOX	NO	NO2	SMOKE
IDLE	6	95R	1571	236533	.027	.085	53.0	741.25	33.38	1.14	9.01	1.53	7.48	0.0262
INTERMED. 1	68	1095R	7967	645009	.012	.011	33.38	8.41	2.23	2.23	51.11	36.46	14.64	0.0268
INTERMED. 2	48	14893	10314	716945	.014	.013	24.42	4.46	2.54	2.54	72.54	54.29	18.25	0.0262
MILITARY	100	16031	12384	764773	.014	.014	19.94	3.32	2.94	2.94	97.01	41.70	15.31	0.0262

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL NOX	NO	NO2	SOX
IDLE	64.98	01.14	2438	2.24	0.34	1.08	2.31
INTERMED. 1	0.43	2.97	3134	7.54	5.35	2.15	12.74
INTERMED. 2	0.20	1.94	3132	9.14	6.04	2.30	16.59
MILITARY	0.13	1.35	3133	10.81	9.14	1.71	19.30

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-004-0076

REPORT DATE 08/19/76
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 70, TYPE A

TEST DATE : 2/22/76

ENGINE 9, NUMBER 2

ENGINE TYPE & MODEL : J75-P17

TEST LOCATION : TINKER AFB

ENGINE SERIAL # : 610029

TEST CELL NUMBER : 9

TOTAL ENGINE TIME : 0 HRS.

TEST CELL OPERATOR : C

PERFORMANCE TEST RESULTS : PASS

SCOTT SUPERVISOR : ZT

AIR FLOW MEASUREMENT METHOD : WELLMOUTH

INSTRUMENT OPERATOR : PH

SMOKE OPERATOR : DO

TEST ENVIRONMENTAL CONDITIONS :

SAMPLE LINE :

TEST TIME (MIL-TIME) : START FINISH

FLOW RATE : 23 LPM

INLET AIR TEMP. (DEG.F) : 39.0

TEMPERATURE : 300 DEG.F

ATMOSPHERIC PRESS. (IN.HG) : 29.92

LENGTH : 100 FT.

RELATIVE HUMIDITY (%) : 44

14

INLET AIR HUMIDITY -

0.0017

100 H2O/GM DRY AIR : 0.0023

0.0017

TEST MODE	RATED POWER	THRUST	FUEL FLOW	AIR FLOW	F/A ACT	F/A CALC	EPR	THC	CO	CO2	NOX	NO	NO2	SNOKE
LOLE	6	889	1490	231838	0.006	0.006	1.090	1094.04	574.01	1.16	9.36	2.77	6.59	10.50
INTERMED. 2	89	14304	18731	746809	0.014	0.013	2.423	2.66	25.19	2.67	46.51	79.07	7.45	53.25
MILITARY	101	16195	12522	705799	0.015	0.015	2.519	2.55	19.16	2.96	114.28	101.47	12.91	53.58
MAX A/B	155	24944	45375	774795	0.022	0.022	2.622	14.35	637.74	4.44	135.51	100.43	35.00	24.33
														W/A

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL	THC	CO	CO2	NOX	NO	NO2	SNOKE
LOLE	94.30	86.34	2739	2.31	1.63	1.63	4.001	3.45	1.02	2.43	2.08
INTERMED. 2	0.11	1.48	3138	10.61	0.91	0.91	33588	113.86	104.06	9.80	15.01
MILITARY	0.10	1.29	3131	12.63	1.42	1.42	39206	158.19	148.46	17.73	17.51
MAX A/B	0.19	14.96	3109	5.22	1.15	1.15	144198	242.10	179.43	62.67	64.86

00 AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS LABORATORY
INDIVIDUAL ENGINE TEST REPORT

SFT 1492-004-0876

REPORT DATE 08/19/76
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 71. TYPE A

TEST DATE : 2/22/76

ENGINE 9. NUMBER 2

ENGINE TYPE & MODEL : J75-P17
ENGINE SERIAL # : 61829
TOTAL ENGINE TIME : 8 HRS.
PERFORMANCE TEST RESULTS : PASS

TEST LOCATION : TINKER AFB
TEST CELL NUMBER : 9
TEST CELL OPERATOR : C
SCOTT SUPERVISOR : ZT
INSTRUMENT OPERATOR : PR
SMOKE OPERATOR : DO

AIR FLOW MEASUREMENT METHOD : VOLUMETRIC

TEST ENVIRONMENTAL CONDITIONS :

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 108 DEG.F
LENGTH : 100 FT.

FUEL ANALYSIS :
SAMPLE # : 14
TYPE : JP-4
WT.% CARBON : 85.68
WT.% HYDROGEN : 14.43
WT.% SULFUR : 0.07
H/C RATIO-ATM. : 2.02
C/H RATIO-MASS : 5.94

TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG.F) : 1740 1810
ATMOSPHERIC PRESS. (IN. HG) : 28.91 28.92
RELATIVE HUMIDITY (%) : 15 16
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0017 0.0017

TEST MODE	RATED POWER	THROST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EXR	THC PPM	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SN	SMOKE W/A
IDLE	5	439	1479	223451	.007	.007	1.446	938.78	625.62	1.24	10.06	3.39	6.67	15.00	0.0230
INTERMED. 1	70	11322	9261	664772	.012	.012	2.117	8.18	33.41	2.37	57.46	41.18	16.28	49.50	0.0231
INTERMED. 2	44	14172	10602	734257	.014	.013	2.000	5.26	25.08	2.73	81.55	59.68	21.95	60.00	0.0231
MILITARY	101	16250	12494	774455	.016	.015	2.015	6.64	20.07	3.02	104.67	87.36	17.31	50.50	0.0231

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL	NOX	NO	NO2	SOX
IDLE	75.77	69.75	2702	2.36	0.08	1.56		
INTERMED. 1	4.34	2.81	3124	7.93	5.68	2.25		
INTERMED. 2	0.22	1.83	3134	9.77	7.14	2.63		
MILITARY	0.25	1.34	3134	11.34	9.47	1.00		

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

ENGINE TF33-P3

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-DBH-8876

REPORT DATE 08/18/76
USAF CONTRACT F29601-75-C-8846

SCOTT TEST NUMBER 59. TYPE 15

TEST DATE : 2 / 3/76

ENGINE 7, NUMBER 1

ENGINE TYPE & MODEL : TF334P1

TEST LOCATION : TINKER AFB

ENGINE SERIAL # : 643295

TEST CELL NUMBER : 9

TOTAL ENGINE TIME : 0 HRS.

TEST CELL OPERATOR : Y

PERFORMANCE TEST RESULTS : PASS

SCOTT SUPERVISOR : ZT

AIR FLOW MEASUREMENT METHOD : BELLMOUTH

INSTRUMENT OPERATOR : PR

SMOKE OPERATOR : 00

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG.F
LENGTH : 100 FT.

FUEL ANALYSIS :
SAMPLE # : 13
TYPE : JP-4
WT.% CARBON : 85.83
WT.% HYDROGEN : 14.40
WT.% SULFUR : 0.08
H/C RATIO-ATM : 2.01
C/H RATIO-MASS : 5.96

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL.TIME) : START
INLET AIR TEMP.(DEG.F) : 1253
ATMOSPHERIC PRESS.(IN.HG) : 56.0
RELATIVE HUMIDITY (%) : 28
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0227

FINISH
1500
64.0
28.35
2#
8.0026

TEST MODE	RATED POWER %	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPM	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SN	W/A	SMOKE
IDLE	5	822	998	125588	.007	.007	1.019	1584.00	625.48	1.19	7.25	1.90	5.35	18.00	0.0228	
INTERMED. 1	67	11038	4962	491293	.010	.009	1.424	15.98	39.20	1.91	39.05	26.71	12.34	57.50	0.0231	
INTERMED. 2	78	12833	5791	532307	.011	.010	1.518	7.38	27.93	2.04	46.87	34.38	12.57	50.00	0.0231	
MILITARY	96	15817	7213	591881	.012	.011	1.681	5.35	18.89	2.32	65.77	48.42	17.35	50.50	0.0231	
TAKE-OFF	105	17376	9081	613870	.013	.013	1.782	3.57	16.65	2.57	81.80	60.86	20.94	50.50	0.0231	

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	NOX	FUEL	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SOX
10LE	128.29	88.46	2644	1.68	0.44	0.44	1.24	113.92	78.6	2348	1.50	0.39	1.10	1.42
INTERMED. 1	0.95	3.98	3127	6.68	4.57	4.57	2.11	4.73	19.7	15514	33.16	22.68	10.48	7.93
INTERMED. 2	0.41	2.73	3130	7.52	5.50	5.50	2.02	2.39	15.8	18126	43.54	31.86	11.68	9.26
MILITARY	0.26	1.62	3132	9.28	6.83	6.83	2.45	1.90	11.7	22593	60.96	49.30	17.66	11.53
TAKE-OFF	0.16	1.29	3133	10.43	7.76	7.76	2.67	1.28	10.4	25318	80.25	62.68	21.57	12.92

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-DDH-8876

REPORT DATE 08/18/76
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 63. TYPE B

TEST DATE : 2/10/76

ENGINE 7. NUMBER 2

ENGINE TYPE & MODEL : TF33-P3

TEST LOCATION : TINKER AFB

TOTAL ENGINE TIME : 0 HRS.

TEST CELL NUMBER : 9

PERFORMANCE TEST RESULTS : PASS

SCOTT SUPERVISOR : ZT

AIR FLOW MEASUREMENT METHOD : HELLMOUTH

INSTRUMENT OPERATOR : PR
SMOKE OPERATOR : 00

TEST ENVIRONMENTAL CONDITIONS :

FUEL ANALYSIS :

TEST TIME (MIL.TIME) : START
INLET AIR TEMP.(DEG.F) : 67.0
ATMOSPHERIC PRESS.(IN.HG) : 28.52
RELATIVE HUMIDITY (%) : 52
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 8.8864

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG.F
LENGTH : 100 FT.

SAMPLE # : 13
TYPE : JP-4
WT.% CARBON : 85.83
WT.% HYDROGEN : 14.40
WT.% SULFUR : 0.08
H/C RATIO-ATM.: 2.01
C/H RATIO-MASS: 5.96

TEST MODE	RATED POWER %	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SN	W/A
INTERMED. 1	5	859	886	126309	.887	.886	1.926	1137.12	543.54	1.15	7.44	3.15	4.29	13.00	0.0231
INTERMED. 2	64	18625	4758	443126	.210	.089	1.392	18.65	34.42	1.86	37.91	25.63	12.28	53.00	0.0230
MILITARY	86	14270	5373	552854	.412	.011	1.585	13.25	22.15	2.20	57.18	41.86	15.32	51.00	0.0230
TAKE-OFF	95	15610	7474	596947	.013	.012	1.707	7.52	19.63	2.43	72.84	55.18	16.86	51.00	0.0230
	103	16959	7874	609818	.013	.012	1.758	8.00	20.65	2.52	78.40	60.37	18.03	55.00	0.0230

EXHAUST MASS EMISSION INDICES :

	THC	CO	CO2	FUEL NOX	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SOX
INTERMED. 1	98.59	82.29	2736	1.85	4.74	1.07	87.35	72.9	2424	1.64	8.69	8.95	1.42
INTERMED. 2	1.14	3.68	3127	6.66	4.58	2.16	5.43	17.5	14851	31.64	21.39	10.25	7.59
MILITARY	0.69	2.01	3134	8.51	6.23	2.28	4.34	12.8	19950	54.21	39.69	14.52	10.19
TAKE-OFF	0.35	1.61	3132	9.71	7.44	2.27	2.64	12.0	23409	72.55	55.57	16.98	11.95
	0.35	1.63	3132	10.19	7.34	2.34	2.85	12.9	24661	80.21	61.76	18.45	12.59

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-003-0876

REPORT DATE 08/18/76
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 64 TYPE C
ENGINE TYPE & MODEL : IF33-P3
TOTAL ENGINE TIME : 62636
PERFORMANCE TEST RESULTS : PASS
AIR FLOW MEASUREMENT METHOD : BELLMOUTH

TEST DATE : 2/10/76

ENGINE 7 NUMBER 2

TEST LOCATION : TINKER AFB
TEST CELL NUMBER : 9
TEST CELL OPERATOR : 8
SCOTT SUPERVISOR : ZT
INSTRUMENT OPERATOR : PR
SMOKE OPERATOR : DO

TEST ENVIRONMENTAL CONDITIONS :

TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG.F) : 143.0 200.1
ATMOSPHERIC PRESS. (IN.HG) : 67.0 62.0
RELATIVE HUMIDITY (%) : 28.52 28.60
INLET AIR HUMIDITY - 52
(GM H2O/GM DRY AIR) : 0.0066 0.0064

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG.F
LENGTH : 10 FT.

FUEL ANALYSIS :
SAMPLE # : 13
TYPE : JP-4
WT.% CARBON : 85.83
WT.% HYDROGEN : 14.40
WT.% SULFUR : 0.08
H/C RATIO-ATM.: 2.01
C/H RATIO-MASS: 5.96

TEST MODE	RATED POWER %	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SN	W/A
TAKE-OFF	103	16959	7874	609818	.013	.012	1.758	7.58	20.44	2.52	78.21	58.69	19.53	51.75	0.0258
MILITARY	95	15610	7474	596947	.013	.012	1.707	8.04	20.11	2.42	71.94	54.49	17.44	51.75	0.0258
INTERMED. 2	86	14270	5373	552858	.012	.011	1.585	11.92	22.32	2.19	56.43	41.41	15.02	52.75	0.0258
INTERMED. 1	64	10625	4750	483126	.010	.009	1.392	13.12	33.57	1.86	37.36	24.69	12.67	52.50	0.0258
IDLE	5	859	986	126309	.007	.006	1.026	1100.02	540.24	1.14	7.48	3.33	4.15	12.75	0.0258

EXHAUST MASS EMISSION INVOICES :

TEST MODE	THC	CO	CO2	NOX	FUEL	NO	NO2	SOX
TAKE-OFF	8.34	1.62	3132	10.17	7.03	2.36	80.10	12.59
MILITARY	0.34	1.66	3132	9.74	7.03	2.36	80.10	12.59
INTERMED. 2	0.62	2.03	3131	8.42	6.18	2.24	80.10	12.59
INTERMED. 1	0.88	3.59	3128	6.57	4.34	2.23	80.10	12.59
IDLE	96.21	82.52	2742	1.84	0.44	1.84	80.10	12.59

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SFT 1492-009-0876

REPORT DATE 08/18/76
USAF CONTRACT F29601-75-C-0046

ENGINE 7. NUMBER 3

TEST DATE : 2/21/76

TEST LOCATION : TINKER AFB
TEST CELL NUMBER : 9
TEST CELL OPERATOR : C
SCOTT SUPERVISOR : ZT
INSTRUMENT OPERATOR : PR
SMOKE OPERATOR : DO

FUEL ANALYSIS :
SAMPLE # : 14
TYPE : JP-4
WT.% CARBON : 85.68
WT.% HYDROGEN : 14.43
WT.% SULFUR : 0.07
H/C RATIO-ATM.: 2.02
C/H RATIO-MASS: 5.94

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 388 DEG.F
LENGTH : 10# FT.

TEST ENVIRONMENTAL CONDITIONS :
START FINISH
TEST TIME (MIL-TIME) : 945 1020
INLET AIR TEMP.(DEG.F) : 35.0 36.0
ATMOSPHERIC PRESS.(IN.HG) : 28.44 29.56
RELATIVE HUMIDITY (%) : 61 54
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0027 0.0027

TEST MODE	RATED POWER	%	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SN	SMOKE --- W/A
IDLE	6	999	896	143423	0.005	0.005	0.005	1.427	1276.54	534.08	1.06	7.39	1.33	6.86	18.50	0.0230
INTERMED. 1	74	12132	5215	526658	0.010	0.010	0.010	1.479	18.10	36.79	1.92	39.26	26.89	13.17	60.50	0.0230
INTERMED. 2	98	14897	5500	582574	0.011	0.011	0.011	1.634	13.56	25.65	2.17	52.59	38.72	13.87	61.50	0.0230
MILITARY	101	16666	7416	622649	0.012	0.012	0.012	1.776	13.08	22.11	2.35	64.59	49.00	15.59	62.00	0.0231
TAKE-OFF	106	17480	7907	634798	0.012	0.012	0.012	1.809	11.17	21.61	2.43	71.21	55.73	15.48	61.00	0.0231

EXHAUST MASS EMISSION INDICES :

# / 100# FUEL															
# / HR															
THC	CO	CO2	NOX	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SOA			
117.46	85.82	2676	1.95	0.35	1.60	184.07	76.0	2371	1.73	0.31	1.42	1.24			
1.07	3.81	3124	6.68	0.44	2.24	5.60	19.9	16293	34.83	23.15	11.68	7.29			
0.71	2.35	3128	7.92	0.83	2.09	4.63	15.3	20329	51.51	37.92	13.58	9.09			
0.63	1.87	3129	8.94	0.82	2.17	4.71	13.9	23201	66.67	50.58	16.09	10.37			
0.52	1.77	3129	9.59	0.59	2.00	4.09	13.8	24428	74.84	58.57	16.27	10.92			

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-008-0876

REPORT DATE 08/18/76
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 69, TYPE A

TEST DATE : 2/21/76

ENGINE 7, NUMBER 3

ENGINE TYPE & MODEL : TF33-P3

TEST LOCATION : TINKER AFB

ENGINE SERIAL # : 642953

TEST CELL NUMBER : 9

TOTAL ENGINE TIME : 0 HRS.

TEST CELL OPERATOR : C

PERFORMANCE TEST RESULTS : PASS

SCOTT SUPERVISOR : ZT

AIR FLOW MEASUREMENT METHOD : BELLMOUTH

INSTRUMENT OPERATOR : PR

SMOKE OPERATOR : 00

TEST ENVIRONMENTAL CONDITIONS :

FUEL ANALYSIS :

TEST TIME (MIL. TIME) : START FINISH
INLET AIR TEMP. (DEG. F) : 1310 1700
ATMOSPHERIC PRESS. (IN. HG) : 41.0 43.0
RELATIVE HUMIDITY (%) : 28.68 29.77
INLET AIR HUMIDITY - 46
(GM H2O/GM DRY AIR) : 0.0226 0.0018

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG. F
LENGTH : 100 FT.

SAMPLE # : 14
TYPE : JP-4
WT. % CARBON : 95.68
WT. % HYDROGEN : 14.43
WT. % SULFUR : 0.07
H/C RATIO-ATM. : 2.02
C/H RATIO-MASS : 5.94

TEST MODE	% POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	N02 PPM	*---* SMOKE SN	W/A
IDLE	6	971	938	143016	.007	.006	1.027	1207.55	532.79	1.09	8.49	2.41	6.07	10.50	0.0231
INTERMED. ?	82	13508	3944	562580	.011	.010	1.548	13.91	29.32	1.99	54.76	43.33	11.43	54.67	0.0231
MILITARY	99	16395	7376	618351	.012	.011	1.702	15.12	25.78	2.29	74.57	62.22	12.35	54.50	0.0231

EXHAUST MASS EMISSION INOICES :														
----- / 1000# FUEL -----*														
THC CO NOX NO N02 SOX														
IDLE	100.93	83.93	2702	2.24	0.62	1.57	102.18	78.7	2535	2.06	0.59	1.47	1.31	
INTERMED. ?	0.80	2.93	3126	8.98	7.11	1.00	4.73	17.4	18584	53.40	42.25	11.15	9.31	
MILITARY	0.75	2.24	3128	10.65	8.89	1.76	5.56	16.5	23070	78.57	65.56	13.01	10.32	

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SFT 1492-00A-0076

REPORT DATE 04/18/76
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 93. TYPE B

TEST DATE : 4/ 6/76

ENGINE 7. NUMBER 4

ENGINE TYPE & MODEL : TF334P3

TEST LOCATION : TINKER AFB

ENGINE SERIAL # : 442614

TEST CELL NUMBER : 9

TOTAL ENGINE TIME : 0 HRS.

TEST CELL OPERATOR : B

PERFORMANCE TEST RESULTS : PASS

SCOTT SUPERVISOR : ZGT

AIR FLOW MEASUREMENT METHOD : HELLMOUTH

INSTRUMENT OPERATOR : PR

SMOKE OPERATOR : 00

TEST ENVIRONMENTAL CONDITIONS :

FUEL ANALYSIS :

TEST TIME (MIL. TIME) : START FINISH

SAMPLE LINE :

INLET AIR TEMP. (DEG. F) : 64.0

FLOW RATE : 23 LPM

ATMOSPHERIC PRESS. (IN. HG) : 28.61

TEMPERATURE : 300 DEG. F

RELATIVE HUMIDITY (%) : 63

LENGTH : 100 FT.

INLET AIR HUMIDITY -

51

(GM H2O/GM DRY AIR) : 0.0083

0.0050

TEST MODE

W/A

LOLE

NO

INTERMED. 1

NO2

INTERMED. 2

NO2

MILITARY

NO2

TAKE-OFF

NO2

EXHAUST MASS EMISSION INDICES :

NO2

THC

NO2

CO

NO2

CO2

NO2

THC

NO2

CO

NO2

CO2

NO2

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NO2

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CO

NO2

CO2

NO2

THC

NO2

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

ENGINE TF33-P7

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-D08-0876

REPORT DATE 08/18/76
USAF CONTRACT F29691-75-C-0046

SCOTT TEST NUMBER 67. TYPE B

TEST DATE : 2/12/76

ENGINE 10, NUMBER 1

ENGINE TYPE & MODEL : TF334P7

TEST LOCATION : TINKER AFB

ENGINE SERIAL # : 651524

TEST CELL NUMBER : 9

TOTAL ENGINE TIME : 0 HRS.

TEST CELL OPERATOR : C

PERFORMANCE TEST RESULTS : PASS

SCOTT SUPERVISOR : ZT

AIR FLOW MEASUREMENT METHOD : HELLMOUTH

INSTRUMENT OPERATOR : PR

TEST ENVIRONMENTAL CONDITIONS :

SMOKE OPERATOR : DO

TEST TIME (MIL.TIME) : START FINISH
900 930
INLET AIR TEMP.(DEG.F) : 52.0 55.0
ATMOSPHERIC PRESS.(IN.HG) : 28.78 28.69
RELATIVE HUMIDITY (%) : 89 88
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0077 0.0077

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG.F
LENGTH : 100 FT.

FUEL ANALYSIS :

SAMPLE # : 13
TYPE : JP-4
WT.% CARBON : 85.83
WT.% HYDROGEN : 14.40
WT.% SULFUR : 0.08
H/C RATIO-ATM.: 2.01
C/H RATIO-MASS: 5.96

TEST MODE	% RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	*--- SMOKE --- SN W/A
IDLE	5	1013	1128	141831	.008	.008	1.022	902.99	688.54	1.39	8.01	2.93	5.08	15.00 0.0231
INTERMED. 1	72	13735	5226	588495	.011	.011	1.505	10.45	26.07	2.15	44.71	33.06	11.65	51.00 0.0231
INTERMED. 2	88	16718	7662	652988	.012	.012	1.675	8.00	16.09	2.38	59.95	45.13	14.82	52.00 0.0231
MILITARY	100	18989	9333	689896	.013	.013	1.826	7.38	12.28	2.60	76.33	58.43	17.90	51.00 0.0231
TAKE-OFF	113	21376	10407	735603	.014	.014	1.992	6.67	10.91	2.84	99.60	78.30	21.30	51.50 0.0230

EXHAUST MASS EMISSION INDICES :

	THC	CO	# / 1000# FUEL	CO2	NOX	FUEL	NO	NO2	SOX
IDLE	66.61	89.74	2813	1.69	0.62	1.07	1.91	1.21	1.80
INTERMED. 1	0.55	2.42	3130	6.81	5.03	1.77	31.33	11.04	9.95
INTERMED. 2	0.38	1.35	3132	8.25	6.21	2.84	42.37	15.62	12.25
MILITARY	0.32	0.94	3133	9.62	7.36	2.76	63.20	20.14	14.28
TAKE-OFF	0.27	0.77	3134	11.49	7.03	2.46	85.90	25.57	16.64

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-009-8876

REPORT DATE 08/18/76
USAF CONTRACT F29601-75-C-0046

ENGINE 10, NUMBER 2

TEST DATE : 4/ 1/76

TEST LOCATION : TINKER AFB
TEST CELL NUMBER : 9
TEST CELL OPERATOR : C
SCOTT SUPERVISOR : ZGT
INSTRUMENT OPERATOR : ZGT
SMOKE OPERATOR : DO

SCOTT TEST NUMBER 87, TYPE B
ENGINE TYPE & MODEL : TF33-P7
ENGINE SERIAL # : 651471
TOTAL ENGINE TIME : 0 HRS.
PERFORMANCE TEST RESULTS : PASS

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG.F
LENGTH : 100 FT.

AIR FLOW MEASUREMENT METHOD : BELLMOUTH
TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL-TIME) : START FINISH
INLET AIR TEMP.(DEG.F) : 925 1100
INLET AIR TEMP.(DEG.F) : 58.0 61.0
ATMOSPHERIC PRESS.(IN.HG) : 28.80 29.80
RELATIVE HUMIDITY (%) : 30 25
INLET AIR HUMIDITY :
(GM H2O/GM DRY AIR) : 0.0032 0.0029

FUEL ANALYSIS :
SAMPLE # : 16
TYPE : JP-4
WT.% CARBON : 85.35
WT.% HYDROGEN : 14.57
WT.% SULFUR : 0.05
H/C RATIO-ATM.: 2.05
C/H RATIO-MASS: 5.86

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL-TIME) : START FINISH
INLET AIR TEMP.(DEG.F) : 925 1100
INLET AIR TEMP.(DEG.F) : 58.0 61.0
ATMOSPHERIC PRESS.(IN.HG) : 28.80 29.80
RELATIVE HUMIDITY (%) : 30 25
INLET AIR HUMIDITY :
(GM H2O/GM DRY AIR) : 0.0032 0.0029

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL-TIME) : START FINISH
INLET AIR TEMP.(DEG.F) : 925 1100
INLET AIR TEMP.(DEG.F) : 58.0 61.0
ATMOSPHERIC PRESS.(IN.HG) : 28.80 29.80
RELATIVE HUMIDITY (%) : 30 25
INLET AIR HUMIDITY :
(GM H2O/GM DRY AIR) : 0.0032 0.0029

TEST MODE	RATED POWER %	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CD2 %	NDX PPM	ND PPM	NO2 PPM	SN	W/A
IDLE	5	936	1059	123055	.009	.008	1.022	1118.63	723.70	1.35	8.65	1.72	6.93	10.00	0.0231
INTERMED. 1	73	13816	5185	548313	.011	.011	1.516	36.00	25.92	2.26	57.11	50.93	6.18	48.00	0.0231
INTERMED. 2	82	15643	7042	594069	.012	.012	1.620	11.54	17.93	2.42	59.30	63.10	6.20	49.00	0.0231
MILITARY	98	19644	9610	637191	.014	.013	1.806	7.16	10.77	2.67	96.64	88.38	8.26	46.00	0.0231
TAKE-OFF	113	21419	10332	687069	.015	.015	1.996	6.61	7.99	2.97	139.01	126.87	12.14	39.00	0.0231

EXHAUST MASS EMISSION INDICES :

TEST MODE	THC	CO	CU2	FUEL NDX	ND	NO2	THC	CO	CU2	NDX	ND	NO2	SDX
IDLE	83.09	93.86	2751	1.84	0.37	1.48	87.98	99.4	2913	1.95	8.39	1.56	1.06
INTERMED. 1	1.81	2.28	3118	8.24	7.35	0.89	11.20	14.1	19285	50.95	45.43	5.51	6.18
INTERMED. 2	0.54	1.47	3123	9.35	8.51	0.84	3.82	10.4	21990	65.83	59.94	5.89	7.04
MILITARY	0.31	0.80	3124	11.82	10.81	1.01	2.63	6.9	26901	101.79	93.09	8.70	8.60
TAKE-OFF	0.25	0.54	3125	15.29	13.96	1.34	2.62	5.5	32287	157.99	144.19	13.00	10.32

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

REPORT DATE 08/18/76
USAF CONTRACT F29691-75-C-0046

SET 1492-009-0076

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

ENGINE 10, NUMBER 2

TEST DATE : 4/ 1/76

SCOTT TEST NUMBER 08. TYPE C

TEST LOCATION : TINKER AFB

ENGINE TYPE & MODEL : IF334P7

TEST CELL NUMBER : 9

ENGINE SERIAL # : 6SI471

TEST CELL OPERATOR : C

TOTAL ENGINE TIME : 0 HRS.

SCOTT SUPERVISOR : ZGT

PERFORMANCE TEST RESULTS : PASS

INSTRUMENT OPERATOR : ZGT

AIR FLOW MEASUREMENT METHOD : BELLMOUTH

FUEL ANALYSIS :

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG.F
LENGTH : 100 FT.

TEST ENVIRONMENTAL CONDITIONS :
START FINISH
TEST TIME (MIL.TIME) : 925 1100
INLET AIR TEMP.(DEG.F) : 58.0 61.0
ATMOSPHERIC PRESS.(IN.HG) : 28.80 29.80
RELATIVE HUMIDITY (%) : 30 25
INLET AIR HUMIDITY :
(GM H2O/GM DRY AIR) : 0.0032 0.0029

SAMPLE # : 16
TYPE : JP-4
WT.% CARBON : 85.35
WT.% HYDROGEN : 14.57
WT.% SULFUR : 0.05
H/C RATIO-ATM.: 2.05
C/H RATIO-MASS: 5.86

TEST MODE	RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SN	W/A
INTERMED. 1	73	13816	5185	548313	.011	.011	1.516	20.43	26.10	2.25	57.00	50.60	6.40	50.00	0.0262
INTERMED. 2	82	15643	7042	594060	.012	.012	1.620	9.74	17.67	2.41	69.71	63.13	6.58	48.00	0.0262
MILITARY	98	18644	9618	637191	.014	.013	1.806	6.81	18.60	2.66	96.77	88.63	8.14	47.00	0.0262
TAKE-OFF	113	21419	10332	687064	.015	.015	1.996	6.33	7.28	2.96	136.77	124.99	11.78	39.50	0.0262

EXHAUST MASS EMISSION INDICES :

	THC	CO	CU	CO2	FUEL NOX	NO	NO2	THC	CO	CU	CO2	NOX	NO	NO2	SOX
INTERMED. 1	1.03	2.30	3120	8.25	7.32	0.93	6.37	14.2	19298	51.00	45.27	5.73	6.18		
INTERMED. 2	0.46	1.46	3123	9.45	4.56	0.89	3.24	10.3	21992	66.57	60.29	6.29	7.04		
MILITARY	0.29	0.79	3124	11.06	10.06	1.00	2.51	6.8	26902	102.12	93.54	8.59	8.50		
TAKE-OFF	0.24	0.49	3125	15.10	13.00	1.30	2.52	5.1	32280	155.97	142.54	13.43	10.32		

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SFT 1422-DRR-0876

REPORT DATE 08/18/76
USAF CONTRACT F29601-75-C-0846

SCOTT TEST NUMBER 89. TYPE B

TEST DATE : 4/ 2/76

ENGINE 10. NUMBER 3

ENGINE TYPE & MODEL : TF33-P7

TEST LOCATION : TINKER AFB

ENGINE SERIAL # : 651354

TEST CELL NUMBER : 9

TOTAL ENGINE TIME : 0 HRS.

TEST CELL OPERATOR : C

PERFORMANCE TEST RESULTS : PASS

SCOTT SUPERVISOR : ZGT

AIR FLOW MEASUREMENT METHOD : BELLMOUTH

INSTRUMENT OPERATOR : ZGT

SMOKE OPERATOR : 00

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG.F
LENGTH : 100 FT.

FUEL ANALYSIS :

SAMPLE # : 16
TYPE : JP-4
WT.% CARBON : 85.35
WT.% HYDROGEN : 14.57
WT.% SULFUR : 0.05
H/C RATIO-ATM.: 2.05
C/H RATIO-MASS: 5.86

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL.TIME) : START
INLET AIR TEMP.(DEG.F) : 1340
ATMOSPHERIC PRESS.(IN.HG) : 28.61
RELATIVE HUMIDITY (%) : 24
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 0.0052 0.0050

FINISH
1445
79.0
28.58
23

TEST MODE	% RATED POWER	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	SN	W/A	SMOKE
IDLE	5	980	1072	12292	.009	.008	1.022	854.16	764.85	1.55	10.27	1.57	8.70	7.00	0.0230	
INTERMED. 1	73	13834	5367	53105	.012	.012	1.501	15.65	16.65	2.45	56.19	60.96	5.23	42.00	0.0231	
INTERMED. 2	83	15778	7219	572389	.013	.013	1.613	11.80	12.56	2.57	79.83	74.14	5.69	40.00	0.0231	
MILITARY	97	18483	9680	614272	.014	.014	1.778	9.14	9.62	2.80	106.99	100.01	6.98	40.00	0.0231	
TAKE-OFF	110	20837	10137	656217	.015	.015	1.943	8.05	8.88	3.05	141.16	140.88	8.28	39.00	0.0231	

EXHAUST MASS EMISSION INDOICES :

	THC	CO	CO2	NOX	FUEL	NO	NO2	THC	CO	CO2	NOX	NO	NO2	SOX
10LE	56.86	88.90	2831	1.96	1.66	0.30	1.66	60.95	95.3	3035	2.10	0.32	1.78	1.07
INTERMED. 1	0.73	1.35	3122	8.12	0.70	0.12	0.70	4.63	8.6	19880	56.15	51.71	4.44	6.36
INTERMED. 2	0.52	0.97	3124	10.14	0.42	0.72	0.72	3.77	7.8	22549	73.22	68.01	5.22	7.21
MILITARY	0.37	0.68	3124	12.48	11.67	0.81	0.81	3.23	5.9	27120	108.34	101.27	7.07	8.57
TAKE-OFF	0.30	0.58	3125	15.12	15.09	0.83	0.83	3.05	5.9	31676	153.26	152.96	8.30	10.13

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SFT 1492-008-2876

REPORT DATE 08/18/76
USAF CONTRACT F29601-75-C-0046

SCOTT TEST NUMBER 94. TYPE B

TEST DATE : 4/ 6/76

ENGINE 10. NUMBER 4

ENGINE TYPE & MODEL : TF33-P7
ENGINE SERIAL # : 651630
TOTAL ENGINE TIME : 0 HRS.
PERFORMANCE TEST RESULTS : FAIL

TEST LOCATION : TINKER AFB
TEST CELL NUMBER : 9
TEST CELL OPERATOR : ZGT
SCOTT SUPERVISOR : PR
INSTRUMENT OPERATOR : PR
SMOKE OPERATOR : 00

AIR FLOW MEASUREMENT METHOD : BELLMOUTH

TEST ENVIRONMENTAL CONDITIONS :

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 300 DEG.F
LENGTH : 100 FT.

FUEL ANALYSIS :
SAMPLE # : 16
TYPE : JP-4
WT.% CARBON : 85.35
WT.% HYDROGEN : 14.57
WT.% SULFUR : 0.05
H/C RATIO-ATM.: 2.05
C/H RATIO-MASS: 5.86

TEST TIME (MIL.TIME) : START FINISH
2000 2025
INLET AIR TEMP.(DEG.F) : 65.0 63.0
ATMOSPHERIC PRESS.(IN.HG) : 28.49 28.50
RELATIVE HUMIDITY (%) : 56 60
INLET AIR HUMIDITY -
(GM H2O/GM DRY AIR) : 8.0077 8.0077

TEST MODE	RATEO POWER	%	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	*---SMOKE---	W/A
IDLE	5	1036	14058	1413	132998	.008	.008	1.026	845.53	680.72	1.40	8.50	2.01	6.49	6.00	0.0231
INTERMED. 1	74	14058	14058	5314	567159	.011	.012	1.524	7.13	22.52	2.35	55.18	50.28	4.90	51.00	0.0231
INTERMED. 2	84	15980	15980	7237	611778	.012	.012	1.637	5.61	14.55	2.49	67.05	61.56	5.49	49.50	0.0231
MILITARY	99	18865	18865	9804	658068	.013	.013	1.816	4.49	10.77	2.74	92.07	84.70	7.37	51.00	0.0231
TAKE-OFF	110	20988	20988	10015	697932	.014	.015	1.959	4.06	8.61	2.96	118.40	108.61	9.79	46.20	0.0231

EXHAUST MASS EMISSION INOICES :

	THC	CO	CO2	* / 1000# FUEL	THC	CO	CO2	* / HR	NOX	NO	NO2	SOX
IDLE	62.05	87.24	2819	1.79	62.86	88.4	2856	1.81	48.40	0.43	1.38	1.01
INTERMED. 1	0.35	1.90	3123	7.67	2.18	12.0	19716	48.40	4.30	4.10	5.21	6.31
INTERMED. 2	0.26	1.16	3124	8.79	1.86	8.4	22608	63.65	58.43	58.43	7.74	8.80
MILITARY	0.19	0.78	3125	10.94	1.64	6.9	27510	96.64	88.91	88.91	10.82	10.01
TAKE-OFF	0.16	0.58	3125	13.07	1.56	5.8	31299	130.88	120.06	120.06	10.82	10.01

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE AREA-WEIGHTED.

SCOTT ENVIRONMENTAL TECHNOLOGY INC.
USAF TURBINE ENGINE EMISSIONS INVENTORY
INDIVIDUAL ENGINE TEST REPORT

SET 1492-083-8876

REPORT DATE 08/18/76
USAF CONTRACT F29601-75-C-8846

SCOTT TEST NUMBER 9S, TYPE A

TEST DATE : 4/ 7/76

ENGINE 1#, NUMBER 4

ENGINE TYPE & MODEL : TF33-P7

TEST LOCATION : TINKER AFB

ENGINE SERIAL # : 631630

TEST CELL NUMBER : 9

TOTAL ENGINE TIME : 8 HRS.

TEST CELL OPERATOR : D

PERFORMANCE TEST RESULTS : FAIL

SCOTT SUPERVISOR : ZGT

AIR FLOW MEASUREMENT METHOD : HELLMOUTH

INSTRUMENT OPERATOR : PR

SMOKE OPERATOR : 00

TEST ENVIRONMENTAL CONDITIONS :

SAMPLE LINE :
FLOW RATE : 23 LPM
TEMPERATURE : 388 DEG.F
LENGTH : 100 FT.

FUEL ANALYSIS :

SAMPLE # : 16
TYPE : JP-4
WT.% CARBON : 85.35
WT.% HYDROGEN : 14.57
WT.% SULFUR : 0.05
H/C RATIO-ATM.: 2.05
C/H RATIO-MASS: 5.86

TEST ENVIRONMENTAL CONDITIONS :
TEST TIME (MIL-TIME) : START 935
INLET AIR TEMP.(DEG.F) : 65.0
ATMOSPHERIC PRESS.(IN.HG) : 28.50
RELATIVE HUMIDITY (%) : 70
INLET AIR HUMIDITY :
(GM H2O/GM DRY AIR) : 0.0097

TEST MODE	RATED POWER %	THRUST #	FUEL FLOW #/HR	AIR FLOW #/HR	F/A ACT	F/A CALC	EPR	THC PPMC	CO PPM	CO2 %	NOX PPM	NO PPM	NO2 PPM	*--- SMOKE ---
IOLE	5	1018	1070	1316.99	0.008	0.008	1.023	1170.92	743.48	1.34	7.95	1.40	6.55	6.97 0.0231
INTERMED. 2	84	15942	7179	614283	0.012	0.011	1.412	1.98	14.63	2.25	56.24	57.60	8.64	50.93 0.0231
MILITARY	99	18730	8632	659312	0.013	0.012	1.783	0.60	9.86	2.49	90.46	79.66	10.80	47.98 0.0231

EXHAUST MASS EMISSION INOICES :

	THC C-1	CO2	NOX	NO	NO2	SOX
IOLE	86.98	96.44	2736	1.69	0.30	1.40
INTERMED. 2	0.10	1.29	3124	9.63	8.37	1.26
MILITARY	0.03	0.79	3125	11.85	10.44	1.41

** AVERAGE CONCENTRATION AND MASS EMISSION DATA ARE MASS-WEIGHTED.